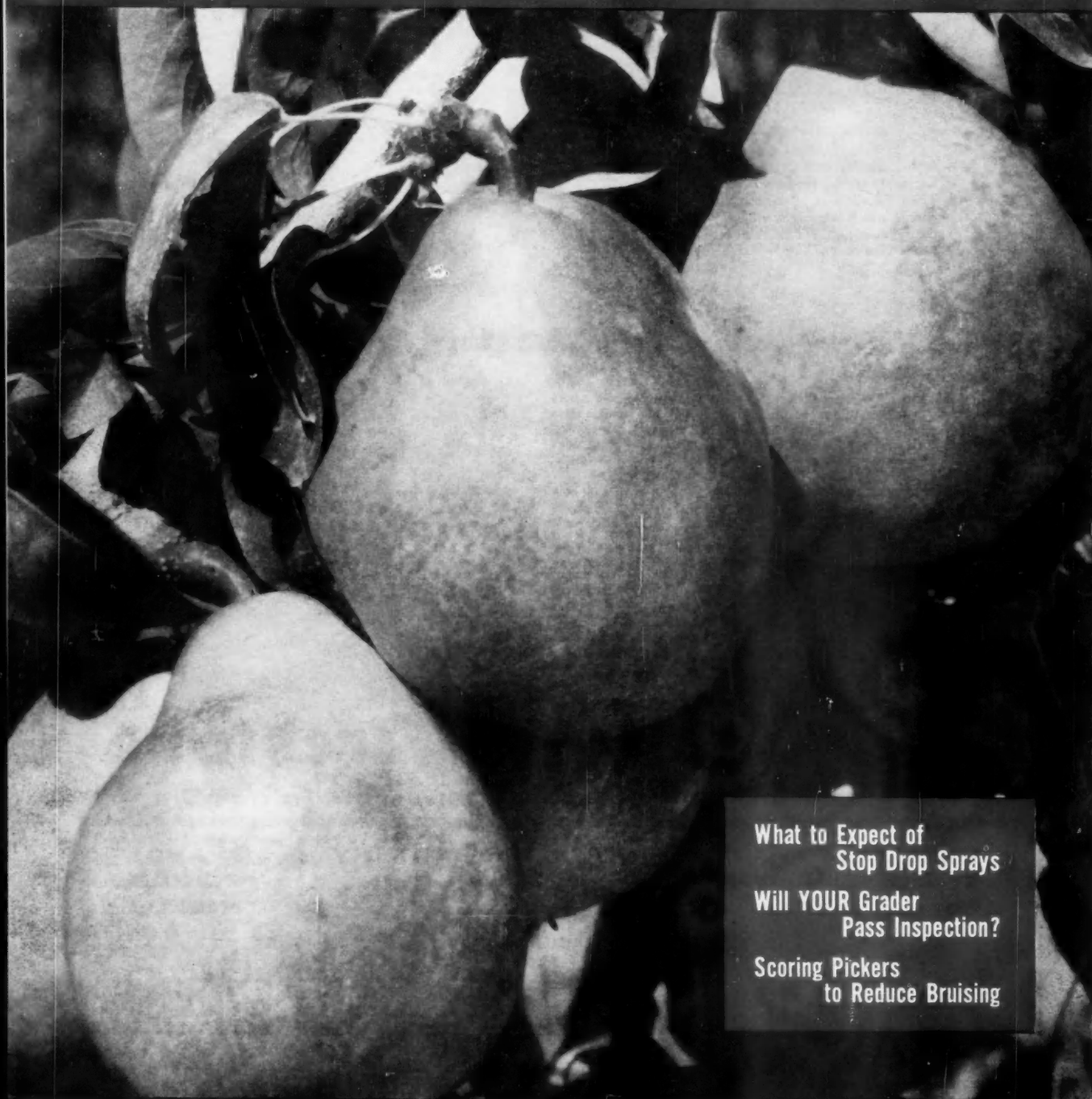


American Fruit Grower

WESTERN EDITION

SEPTEMBER • 1956



What to Expect of
Stop Drop Sprays

Will YOUR Grader
Pass Inspection?

Scoring Pickers
to Reduce Bruising

• How to Tell When to Pick Apples • Pears • Plums •

WE TORTURE-TEST TRACTOR TIRES



Pilotless tractors work day in and day out testing tractor tires under the most adverse conditions. The units above travel around a center pivot post to which they are attached by cables. To the right, a tractor is punishing tires with a 12-ton load.



TO SAVE YOU MONEY

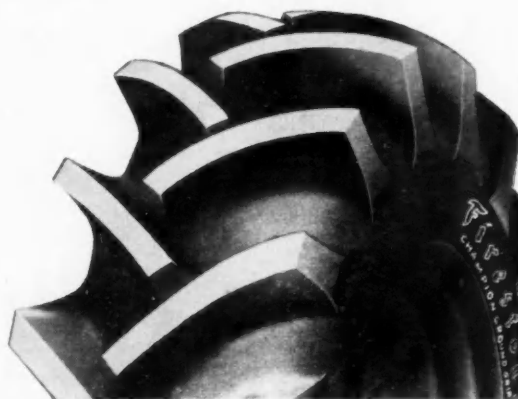
AT THE Firestone Test Station, Columbiana, Ohio, where the first farm tractor tire was developed, Firestone farm tires are being subjected to many torturous abuses—abuses far beyond the normal farm operation. This is being done to make sure Firestone farm tires will pull better, last longer and save you money when you put them on your tractor.

Grueling tests with heavily loaded, pilotless tractors, as shown above, expose tires to extreme sidewall flexing. Other exhaustive tests are also made on a mud course, sod-covered fields and hard country roads.

Tests are conducted for wear, slippage, aging, ability to deliver drawbar horsepower and other factors. All types of Firestone farm tires from the largest tractor sizes to the smallest implements go through such tests before they are ready for the public.

Tests prove conclusively that Firestone farm tires save you money with greater drawbar pull, better cleaning, longer tire life and better retreadability.

Let your Firestone Dealer or Store show you the many other features that help save you money.

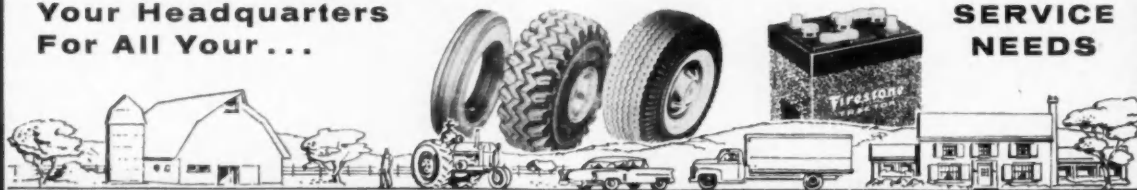


ALWAYS BUY TIRES BUILT BY **Firestone**
Originator of the First Practical Pneumatic Tractor Tire

**Make FIRESTONE
 Your Headquarters
 For All Your ...**

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**SERVICE
 NEEDS**



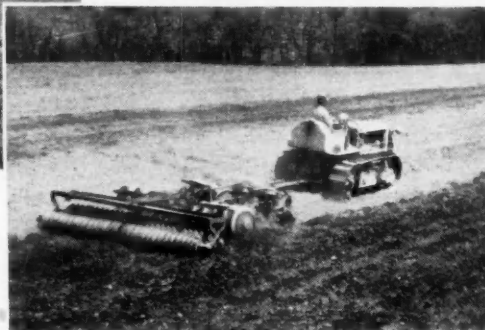
Copyright 1956, The Firestone Tire & Rubber Company

Enjoy the Voice of Firestone on radio or television every Monday evening over ABC



D2 pulls 500 gal. speed sprayer on Lottie Bear Fruit Farm, Mount Wolf, Pa. Clair Bear reports, "In rainy weather when ground becomes muddy and impossible to get through with any other type tractor, the D2 does it."

"Couldn't get along without the D2," reports Everett Weiser, Farm Manager for N. D. Starry, York Springs, Pa. It is shown pulling a heavy-duty orchard disk and packer.



Orchard Farm Utility

CAT* D2 TRACTOR ... better for all 3!



D2 with Tool Bar Dozer clears land on the Jack Beam Farm, Sabina, Ohio. This powerful pair is ideal for moving dirt, filling gullies, landscaping, snow plowing, etc.

Back in the days when orchardists required only a substitute for a team of horses, wheel-type tractors were satisfactory. But today's progressive and successful fruit growers demand a tractor that can handle more jobs more efficiently.

One tractor fills the bill—a Cat D2 Tractor!

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Compact and maneuverable in the orchard, the D2 has power to pull a big, spread-out hitch doing the general farm work found around most orchards. It has the work capacity to replace several ordinary farm tractors, to get over the fields in a hurry so that you can devote more time to your orchard.

And, as an all-around utility tractor, the D2 can save you money and time, accomplish jobs ordinary orchard tractors can't—pushing out trees and

stumps, forming land for better water distribution, filling in low spots, building drainage and irrigation ditches—to mention but a few.

There's so much more to be said about the D2 that only a demonstration in your orchard can do it full justice. Name the date... your dealer will demonstrate! No obligation, of course.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

FREE BOOKLET NOW AVAILABLE:

"TIRES OR TRACKS"... discusses the place of both wheel and track-type tractors on your farm or orchard. Write for your copy to Caterpillar Tractor Co., Dept. AMF96, Peoria, Illinois.

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"SWING-AROUND"
TOOL BARS AND TOOLS**

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NIAGARA "NO FROST"

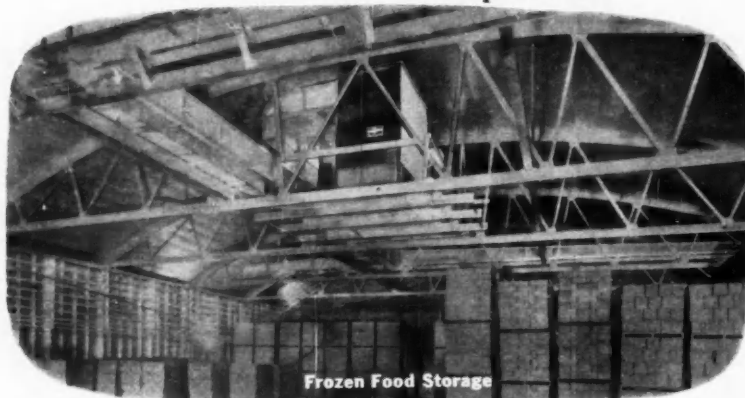
25 Years Successful Experience

★ *Never any defrosting shutdown*



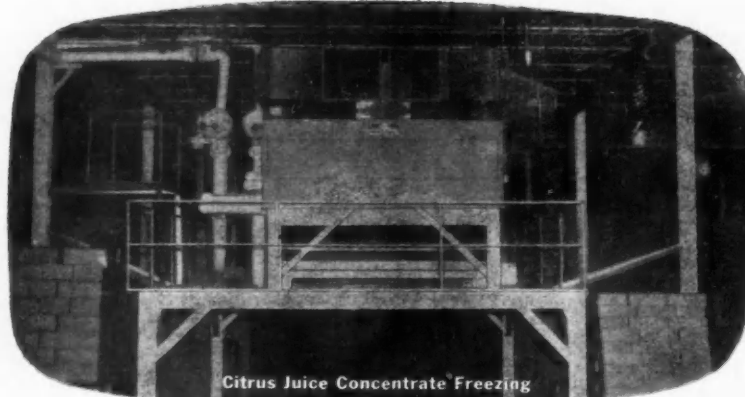
Citrus Concentrate Freezing and Storage

★ *Never a rise in temperature*



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★ *Save Power... Reduce Costs*



Citrus Juice Concentrate Freezing

Write for Niagara Bulletin 105

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Dept. F.V. 405 Lexington Ave.

New York 17, N. Y.

District Engineers in Principal Cities of U. S. and Canada

American Fruit Grower

REG. U. S. PAT. OFF.

The Only National Fruit Publication

Vol. 76 SEPTEMBER, 1956 No. 9

FEATURED IN THIS ISSUE

Cover photograph showing a cluster of pears was taken in the extensive orchards of Richey & Gilbert Company, Yakima, Wash. This year's pear crop for the state of Washington is estimated at about 4 million bushels or 2.5 million bushels less than last year. Total U. S. pear crop for 1956, estimated at 30.5 million bushels, is about a million bushels more than in 1955.

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AMERICAN FRUIT GROWER

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B.F. Goodrich Farm Tire Rodeo

Fall round-up of tire values

Big trade-ins available on all sizes and types of tires.



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rear tractor tire

Biggest tire value on the market today! Comes on new tractors.

53⁴⁵
9-24
4 ply

*plus tax and your retreadable tire

SIZE	PLY	SALE PRICE*
10-28	4	72.95
12-38	6	130.60

All sizes available



SUPER HI-CLEAT

rear tractor tire

Same tread design that came on new tractors for years!

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9-24
4 ply

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10-28	4	58.30
11-28	4	66.50
11-38	4	84.95
12-38	4	88.85

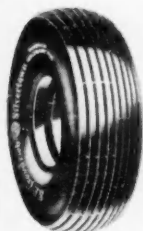


PLOW TAILWHEEL

Gives more uniform plowing depth, greater cushioning against shocks.

12⁹⁰
3.50-12

*plus tax and your retreadable tire



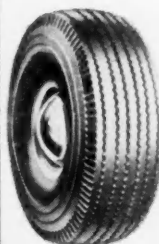
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6.50-16	4	20.45



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Prices from

9⁹⁵
6.70-15

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Full size, fully guaranteed!

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SIZE	SALE PRICE*
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5.00-15	13.65
5.50-16	14.85
6.00-16	16.55

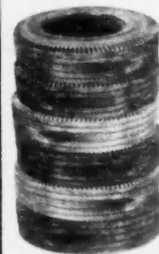


GARDEN TRACTOR

14¹⁵
5-12

*plus tax and your retreadable tire

SIZE	SALE PRICE*
6-12	15.55
6-16	16.80
7-16	19.95
8-16	28.65



USED TIRES

Prices start at only **2⁹⁵**

Big selection for cars, trucks, implements and tractors!

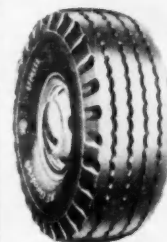


PASSENGER CAR TIRES

11⁹⁵ Extra Service tube-type tire
6.00-16

12⁹⁵
6.70-15

Prices plus tax and retreadable tire



EXPRESS TRUCK TIRE

17⁹⁵
6.00-16

plus tax and your retreadable tire
Other sizes proportionately low priced

See your B. F. Goodrich retailer today.
B. F. Goodrich Tire Co., A Division of
The B. F. Goodrich Co., Akron 18, Ohio.



Your B. F. Goodrich retailer is listed under Tires in the Yellow Pages of your phone book

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—formulated for the toughness that satisfies ...and sells!

Probably the main reason for the popularity of polyethylene packaging is toughness.

Shoppers know that polyethylene is the one bag that can take the roughest handling without tearing. They count on polyethylene to keep produce clean and fresh-looking. They expect polyethylene bags to have "nine lives"—to be re-usable again and again.

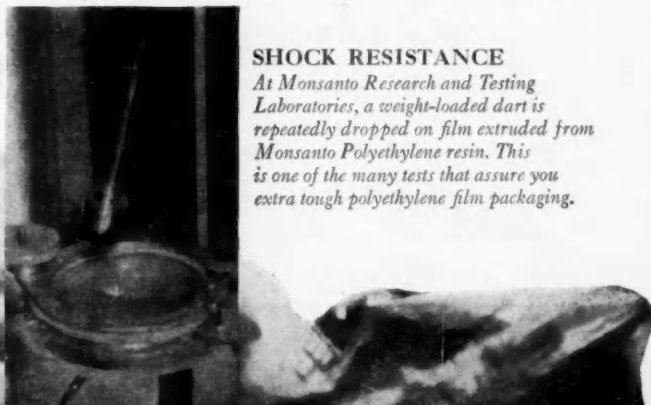
Toughness also means less packaging trouble for the packer or store manager—fewer torn bags, fewer rejects, and all-around customer satisfaction.

This customer satisfaction starts with special tough *resins* for polyethylene film developed by Monsanto Research. That's why you'll find bags made from Monsanto polyethylene are more likely to be giving you the toughness that means customer satisfaction and more sales for you. Specify Monsanto Polyethylene when you next order packaging. For names of certified bag makers, write Monsanto Chemical Company, Room 1370, Springfield 2, Mass.



SHOCK RESISTANCE

At Monsanto Research and Testing Laboratories, a weight-loaded dart is repeatedly dropped on film extruded from Monsanto Polyethylene resin. This is one of the many tests that assure you extra tough polyethylene film packaging.



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The new easier AMERICAN FRUIT GROWER Tree Prop used by many growers does the job quickly, efficiently and at very LOW COST!



**PROPS ALL SIZES
OF BRANCHES**



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15c apiece
12 for \$1.50
30 for \$3.00
100 for \$10.00

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Willoughby, Ohio

Please send me (No.) _____
Attached is \$ _____
Name _____
Address _____
City & State _____
(Offer good only in U.S.A.)

LETTERS TO THE EDITOR

Hardy Apple Varieties

Dear Editor:

I am making a collection of extra hardy apples of high quality. Would be glad to send scions of Stone, Wyman Pippin, Eastman Sweet, and some other rare old kinds to anyone wanting to graft them. Wyman Pippin is an old Vermont sort, a waxy small green apple with a red cheek, about the only apple hardier than McIntosh, which is superior to it in quality. Eastman Sweet is a long, striped apple with a fine, mellow, sweet flavor. Stone is about the best of the Blue Pearmain type. All are hardy, long-lived trees and good winter keepers here.

Heuvelton, N. Y. Fred L. Ashworth

Challenge To Better Marketing

Dear Editor:

This last apple season has brought forth more speech making and article writing on the need for better marketing than I can remember in any of my 30 years of experience in the marketing of eastern apples. There have been some very good soul-searching efforts to analyse what is wrong with the merchandising of apples when a little surplus crop can bring disastrous prices to so many.

The danger is that with a short crop this coming season and a seller's market, many of those who were impressed this winter with the need for changes will go back to the same old methods. Another danger is that some growers who were sold on setting up co-operative marketing organizations as a panacea for their ills may have a wrong conception of what such an organization will do for them. Some who have preached grower organization have emphasized the collective bargaining angle rather than the far more important function of unified control over production and packing and service to customers.

The large producer today has no marketing problem. To begin with, he can produce more economically and scientifically because volume enables him to distribute the cost of the most modern equipment. In harvesting, packing, and storing, he can afford to have equipment that gives him efficiency, control, and flexibility. To the buyer he can offer uniformity of quality and pack, dependability of deliveries and continuity of supply. These factors enable him to offer a degree of service to regular customers that is a very important element in successful merchandising today.

I could name several dozen apple growers and shipping organizations in the East that are doing that kind of job and are financially successful at it. The key to their success is that they safeguard in every possible way the reputation of their pack. They are seriously concerned with giving their customers a product that will bring repeat business. They describe their fruit accurately. Their packs are bought on description with complete confidence on the part of the buyer.

We have a number of eastern shippers whose packs are so well known in foreign markets that exporters call us in May and June asking us to book orders for them for delivery in August and September, "whatever the price is when the market is established."

The grower who must sell "as is" on personal inspection of the buyer doesn't fit in the new era of merchandising.

There is only one way that the smaller growers in a concentrated producing area

can accomplish what the efficient large growers are already doing and that is to combine their volume in a co-operative or through a packing and marketing association. Until they are ready to submit to a unified control of their production methods, their packing, their storing, as well as their marketing, they cannot expect to get long range results. Hiring a salesman won't solve their problems. They must be prepared to back up their salesman with dependable supplies.

What is needed to meet this challenge of a new marketing era is the application of sound business principles. I am sure the apple industry will keep up with the wheels of progress.

New York, N. Y. Herschel Jones
Herschel Jones Marketing Service, Inc.

Vrije Spil

Dear Editor:

Here in Holland the system of planting permanent trees has changed. Eighty per cent of the new planting is of permanent trees on East Malling types IX, IV and VII as bushes, or as we call it, "vrije spil." The latter is a small bush with a stem in the center surrounded by short branches. These branches have to be fixed in a horizontal position. This breaks the growing and stimulates flower buds.

In the first season after planting the young branches are fixed in a horizontal position by a string from branch to stem. The branches in horizontal position form many flower buds in the first year, and in the second year the string can be removed. The branch will never rise again to the former position because its wood has hardened and the heavy crop will keep it down. It is most essential to bring the branches of the underpart to cropping as quickly as possible. Then the growth of the upper branches will not be so strong and they also will have early cropping and will fall into horizontal position by the crop's weight.

The trees may be staked and connected by wires, one over the top of the stakes and one about 3 feet above the ground. The trees can also be staked and not connected by wire, or not staked, but in windy localities the trees are always staked.

When possible the branches are tied to a wire, but only after three or four years' growth.

The cultivation of "vrije spil" varies with the condition of soil, climate, and the characteristics of the variety chosen.

EDE Gld., Holland Piet Dekker



Cox Orange Pippin "vrije spil" in Holland.

AMERICAN FRUIT GROWER



Model 3104— $\frac{1}{2}$ ton, 78 $\frac{1}{8}$ " box. All pickup models feature High-Level ventilation, concealed Safety Steps.

Efficiency Experts...

NEW CHEVROLET TASK-FORCE PICKUPS!

They're the most modern pickups money can buy... loaded with high-efficiency features!

You get a grain-tight tailgate, flat-ledged side panels and a low platform for easy loading. You get easier going with Ball-Gear steering, a modern cab loaded with comfort and convenience features, and a suspension system that takes the bumps out of back roads. Work-saving Hydra-Matic and the most modern V8 of any truck are both available as extra-cost options. Talk it over with your Chevrolet dealer. He'll match a Task-Force pickup exactly to your job. . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Anything less is an old-fashioned truck!



Model 3204— $\frac{1}{2}$ ton, 90" box. Notice the clean, uncluttered lines of Chevrolet's way-ahead Work Styling!

Model 3804—1 ton, 108 $\frac{1}{4}$ " box. Extra cargo space for long, bulky loads. 4-speed transmission standard.



GO NON-STOP on all your orchard jobs



with the International® 300 Utility Tractor



Rear-mounted equipment mounts in seconds with Fast-Hitch—just Back . . . Hitch . . . and GO! Above: the International 300 Utility with 3-section McCormick® spring-tooth harrow.

You'll match tractor speed to every orchard need . . . save time on every turn with the International 300 Utility tractor! Torque Amplifier drive lets you decrease speed one-third, increase pull-power up to 45% *on-the-go*, in any gear. To resume full speed, just push the TA lever—you're on your way . . . again no stopping, no gear shifting!

TA gives you 10 forward speeds from 1.8 to 16.7 mph. Matched with *completely* independent pto, you can drive power equipment at constant rpm while changing travel speed to fit the job.

New fingertip power steering makes soft ground turn-arounds easy . . . with one hand free to operate equipment! And, the International 300 Utility leads its field with up to 1,000 pounds greater *built-in* weight for greater traction on soft orchard ground. See what a difference that extra half-a-ton means in greater strength and stamina . . . on all *tough* jobs!



Your IH dealer will demonstrate . . . phone him today! Work the 300 Utility on your place and see how it makes your orchard jobs easier, faster. Ask about the liberal IH Income Purchase Plan.

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INTERNATIONAL HARVESTER DEALER**

International Harvester products pay for themselves in use—McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Crawler and Utility Tractors and Power Units—General Office, Chicago 1, Illinois



When would you pick these Rome Beauties? Most growers watch color to know when to pick apples.

How to Tell WHEN TO PICK APPLES PEARS PLUMS

Here are suggestions to guide you in picking fruit at the optimum stage of maturity

By A. LLOYD RYALL U. S. Department of Agriculture

FRUIT which is immature when harvested frequently shrivels during marketing, has unattractive color and finish, and either fails to ripen or lacks characteristic flavor and texture when ripe. On the other hand, fruit which is overmature when harvested is more subject to physical damage and decay, has a shorter market life, and frequently develops internal disorders during storage.

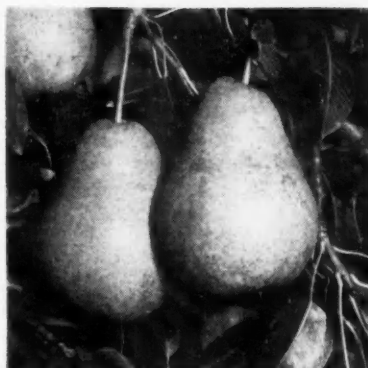
Much research has been done in attempting to correlate definite stages of maturity with dessert and storage quality and to develop objective methods for determining the optimum picking time. The more obvious changes which occur as fruits mature are increasing fruit size, decreasing flesh firmness, and intensifying skin and flesh color. These changes provide the bases for most of the maturity indexes now used for deciduous tree fruits.

Less apparent but important changes occur in the chemical components during maturation. Sugars generally increase while acids and the compounds responsible for astringency or bitterness decrease as the fruit matures. There is also an increase in specific gravity as the proportion of solids to water in the tissue increases.

Each of these changes forms the basis for a possible maturity index, but none of them is entirely dependable under the many variations of weather, water supply, fertilizer practice, tree age, and crop size.

Fruit firmness, as measured with a pressure tester on the pared cheeks, is probably the most dependable single index, but there is evidence that soil moisture deficiency or excessive transpiration during maturation results in flesh firmness readings substantially above those found in fruit of similar maturity which has not been subjected to moisture stress.

The disappearance of green color from the skin with a corresponding increase in yellow ground color has been widely tested as a measure of maturity. Color charts with shades from green to yellow have been developed for the objective measurement of such color changes, but ex-



When will these pears be ready for picking? A pressure tester will give the best answer.



Plum growers rely chiefly on skin and flesh color to determine best time for harvesting.

posure, crop size, and nitrogen fertilization affect the disappearance of chlorophyll, which in turn decreases the value of ground color as a maturity index.

The amount of soluble solids (mostly sugar) in the extracted juice of many fruits has been determined by using hydrometers and refractometers. A high level of soluble solids generally denotes good dessert quality, but a similar sugar content in fruits of a given variety does not always indicate comparable maturity.

From the many determinations made for fruit acids, it has been found that in general the acidity of deciduous fruits decreases as they mature. However, this measurement alone has not provided a dependable index of maturity. Acid content is usually related to soluble solids and stated as a ratio of soluble solids to titratable acids.

Another index which has been extensively investigated, and in some instances successfully applied, is the number of days from full bloom. Within a given area the period from full bloom to desirable harvest maturity appears to be rather uniform for pome fruits such as pears and apples.

(Continued on page 25)

WHEN IS U.S. NO. 1 NOT U.S. NO. 1?

Last August a worried young farmer asked me to help him locate and correct a problem. He had just returned from the Benton Harbor market where inspectors had made him relabel a large load of apples as a utility grade.

He had packed what he thought were U.S. No. 1's the afternoon and evening before. Inspectors told him they were U.S. No. 1 except for being badly bruised. He relabeled them utility grade and sold them at \$1.50 per bushel while U.S. No. 1's were bringing \$3.00 per bushel. Needless to say, he was perturbed and angry.

We double-checked his pickers who had been with him for three years, and their handling of the apples was above reproach. Then we went to the packing shed to look over his grader and packing equipment. The young farmer said, "I've used that grader just that way for three years with the same help and never had any trouble before."

I explained that a recently broken severe dry spell had made his apples unusually succulent and that his grader needed some changes. The dumping portion and the canvas carrying belt of his grader needed padding underneath, and his packing table had too steep a tilt, causing the apples to roll down too fast. Also his packing tables, which had enough padding under ordinary conditions, needed a softer covering to handle the unusually succulent apples.

He made these changes and was soon a delighted young farmer—getting U.S. No. 1 prices for U.S. No. 1 apples.—*R. F. Bittner, District Marketing Agent, Michigan.*



Good housekeeping is routine procedure at Fred L. Glaze packing house, Winchester, Va.

Will *Your* GRADER PASS INSPECTION?

Slipshod 'housekeeping' will cost you money in damaged fruit and equipment

By DAVIS PIPER

John Bean Division

WHEN considered in terms of the number of days of operation each year, your investment in packing house equipment is a substantial one. Yet with quite simple and ordinary maintenance, the annual expenditure for repairs and replacements can be one of the lowest.

Most growers are attentive to daily maintenance during the operating season. They have to be, for shutdowns are much too costly.

But what about a daily examination of transfer lips which may have been damaged by trash, a check on take-up pulleys for proper alignment of belts, and a daily look into the cleaner for wax globules on the brushes and buffers which, at their high speeds, may flail the fruit?

It is at the close of the packing season that greatest good can be done to

protect your capital investment and assure dependable, accurate, and gentle performance the following season. More than a broom and an oil can are required if the job is to be properly done.

Soap and water will clean belting that has a sandpaper surface from abrasive materials embedded in accumulated wax. A little of the same applied to sorting table rolls, transfer lips, and the faces of shunts and other frequent apple contact points is particularly important.

Belting should be removed to get at the drive and idler pulleys. These are crowned to maintain alignment of the belting against edge fraying. Frequently debris falls through to the belt return, and is carried up and adheres to the pulleys, creating a false and unwanted crown which nullifies

all efforts for proper alignment. While the belting is off is a good time to check bearings to see that pulleys turn freely.

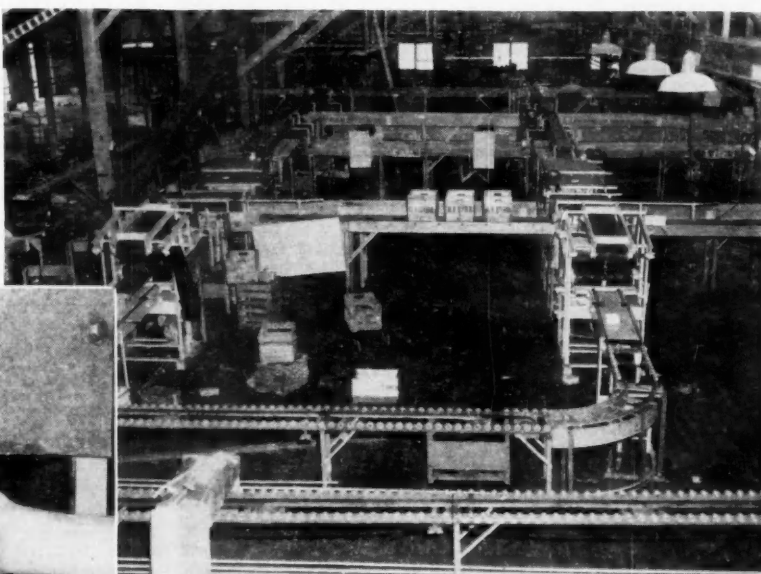
Growers using chain sizers will be surprised at the improved accuracy of sizing if they remove the chains at the end of each season, have them steam-cleaned by their farm equipment dealer, and then wrap them in burlap or newspapers after brushing them with or immersing them in a light oil. Those with the free-turning bushings separating the links will particularly benefit.

Sizers with ejector wheels should be cleaned of wax and grit. Weight-type sizers should be lubricated, and a protective covering provided for the weight mechanisms.

Growers whose packing houses are subjected to alternate heat and cold should check for condensation in the gear boxes of reduction units and gearmotors. These may be tipped to one side to remove water from the bottom, and then filled completely; but if this is done they should be

tagged with red to avoid use until drained to the proper level. A more common procedure is to drain and fill to the proper level just before use the following season to avoid having a foamy emulsion.

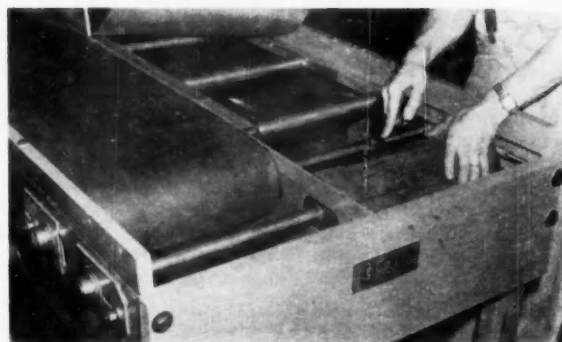
Now for some things that should not be done! Don't put off until next season the simple repairs and replacements that can be performed while



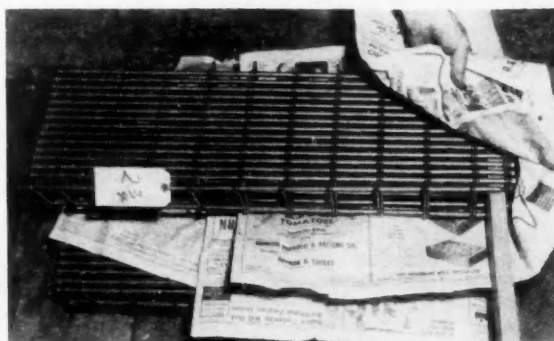
New equipment installed in H. F. Byrd packing house at Berryville, Va., this summer. Excellent maintenance is the policy at all Byrd houses.



Cleaner brushes and cloths should be free of wax. Wax accumulates abrasive dirt which flails the fruit. Change buffer cloths and clean brushes with burlap soaked in warm water.



Cleaning pulley faces to restore crown for easy belt alignment. Note belting recently scrubbed with soap and water.



Sizing chains cleaned, lubricated, and wrapped for winter storage.

they are fresh in your mind. Plan major additions and changes while the packing house is in operation. A few minutes spent making notes and simple sketches are insurance against forgetting them.

The top of the grader should not be used as a "catch-all" storage. All too often facing pans, baskets, crates, and other supplies are stored on top of the grader and packing tables with torn padding, punctured belts, and bent sizing chains as the result. Even such things as polyethylene bags and basket liners are better stored on an inexpensive rack rather than piled on the grader.

How many conveyor belts are actually worn out by ordinary wear? Wear at the edges of the belt because of misalignment is all too common. But the greatest single cause of damage is foreign material which, when

the machine is started up, is conveyed to some inaccessible point where it causes irreparable damage. Many growers have experienced this to find that the culprit is a screwdriver or a bolt or perhaps the wire bail from a basket.

A few months ago three men were conversing in a small packing house in eastern Pennsylvania. One remarked on the well-cared-for appearance of the packing room and grading equipment.

The packing house owner replied: "I put in this equipment the same year the kitchen of our home was modernized. It cost a lot more than that kitchen. My wife is a good housekeeper and with daily use the kitchen gets daily care."

A big investment in grading equipment is worth protecting with the same care.

THE END.

CHECK LIST FOR CLOSING THE PACKING HOUSE

- a) All oil reservoirs filled and zerks greased sufficiently to force out old grease?
- b) Buffer cloths changed and cleaner brushes free of wax? (Use burlap soaked in warm water to clean)
- c) Sizing chains cleaned and lubricated? This is a must!
- d) Belt facings checked and repaired? Leave belts slack.
- e) Pulley crowns cleaned?
- f) Belts and sorting rolls cleaned of wax and covered against oil drip?
- g) Padding and sponge rubber repaired? (Cover packing bins with protective papers.)
- h) Variable speed pulleys pulled off and cleaned and lubricated?
- i) Motors covered with paper bags?
- j) Liners, baskets, trays, etc., all neatly arranged?
- k) Is everything clean enough to be proud to show?

Supermarket Mergers ... A CHALLENGE for the CO-OPS!

Chains point the way for joint selling and merchandising effort by local grower groups

By J. K. SAMUELS

U. S. Department of Agriculture

IT is becoming increasingly apparent to many fruit and vegetable co-operatives that they need to improve present selling and distribution methods. Ways must be found to join together local associations for effective merchandising.

About two-thirds of the 800 fruit and vegetable co-operatives still are unaffiliated local shipping and processing organizations. Present-day marketing needs make it difficult for them to compete successfully for a share of the consumer's dollar.

Self-service retailing places great importance on the brand a product carries. An unadvertised brand may be largely overlooked by the consumer and unwanted by the retailer.

Many sales in self-service supermarkets are the result of impulse buying which places great emphasis on an attractive package and uniform quality. To catch the consumer's eye becomes a real challenge when there may be over 6000 individual items in the store.

Concentration of buying on the part of both chain stores and co-operative or voluntary chain groups adds to the problems of local co-operatives. In 1955 alone 33 mergers occurred in the retail food trade. Such groups are able to exert a strong influence on price, and they require large volumes of uniformly graded and packaged products.

With joint selling, it is possible for co-operatives to do more effective advertising and promotion—pre-selling. A family of products can be brought together under a common label and advertising and selling costs spread over a number of items. The bargaining position of the seller is also strengthened by bringing a larger portion of the supply together.

For many years Sunkist Growers, Inc., has done an outstanding job of building demand for California oranges and lemons and selling the output of its growers. On a more modest, but effective scale, have been Seald-Sweet Sales, Inc., in Florida, and Texus Citrus Exchange in Texas, in selling and promoting citrus and citrus products in the two states.

The National Grape Co-operative has just acquired the Welch Grape Juice Company and its Welch's trademark. The \$15 million purchase price was paid from certificates issued to growers over and above the going cash price for grapes. This acquisition gives growers a national premium brand that has strong consumer demand.

The development of American National Foods, Inc., is a move by local fruit and vegetable co-operatives and growers into national marketing. ANF sells almost a complete line of fresh fruits and vegetables under its Blue Goose brand. It serves growers in many areas and has a nationwide sales and merchandising program.

Knouse Foods Co-operative, Peach Glen, Pa., organized in 1949, serves fruit growers in the Appalachian area. It sells a wide variety of processed apple and other fruit products, including pie fillings, under its Lucky Leaf brand.

In some respects it has been harder for co-operatives handling processed products to join together in selling, even though these are identified by a brand name. There have been a few

federated-type sales agencies operating mainly on a regional basis, such as North Pacific Cannery and Packers, Portland, Ore. But as yet there is no nationwide sales and merchandising setup available to processing co-operatives.

Some steps are being taken, however, that may lead to such a program. At present, American National Foods has an experimental program in operation in the Northwest where three processing co-operatives have allocated a portion of their frozen pack for sale under Blue Goose. Several other processing co-operatives in the Northwest are also working out joint sales arrangements.

There are serious problems in trying to establish such a sales agency. It must first be determined what kind of marketing arrangement would best meet the needs of co-operatives. Should a central agency advertise and sell all the brands of members, or concentrate on a commonly-owned brand, or promote a seal or identification to be used on members' brands? Also, should buyer label business be handled through a central office?

(Continued on page 23)

FRUIT MARKETING GUIDE

SELECTING the right buyer and working closely with him can mean the difference between profit and loss to the fruit grower.

Commission man, broker, ship-

per, and processor—all make their living buying and selling your fruit. Below are listed some outlets interested in doing business with you. Write or phone them for information.

CALIFORNIA

Gerber Products Co.,
9401 San Leandro St., Oakland.
Phone—Lockhaven 9-1100

ILLINOIS

Schmidt Bros.,
Foot of E. State St., Peoria.
Phone—4-8228

MICHIGAN

Gerber Products Co.,
405 State St., Fremont.
Phone—65

MISSOURI

Cable and Field,
Cape Girardeau.
Phone—5-5490

NEW YORK

Gerber Products Co.,
Bullshead Station Box 8, Rochester.
Phone—Genesee 9100

Herschel Jones Marketing Service, Inc.,
99 Hudson St., New York City.
Phone—Walker 5-5892

OHIO

The Castellini Company,
11 W. Water St., Cincinnati 2.
Phone—Parkway 1-7711

PENNSYLVANIA

Sprucall Fruit Company,
44 1/2 8th St., Pittsburgh.
Phone—Atlantic 1-7394
(Has store outlet as well as terminal platform; is interested in consignment.)



Airplane application of stop drop spray to Delicious apple trees in Washington, using 5 gallons of highly concentrated NAA spray solution per acre.



No apple drops on this tree sprayed with 2,4-D at USDA's Plant Industry Station, Beltsville, Md.

More APPLES for the TEACHER!

**Use one of today's stop drop sprays—there are several—
and reduce your preharvest losses of apples and pears**

By L. P. BATJER

U. S. Department of Agriculture

THE possibility of preventing the drop of apple fruits by use of plant growth substances was suggested by the effect of these chemicals in preventing the abscission of leaf petioles on cuttings which had been treated to induce rooting.

Following this observation, the first test with naphthaleneacetic acid (NAA) on apples was applied in 1939 at the Plant Industry Station, Beltsville, Md. We selected 4 trees of Close, a summer variety, for the experiment. Two of the trees received a 10 ppm spray on July 3; the other two served as checks. Four days later the check trees had 2 bushels of apples on the ground while the two sprayed trees had dropped only 21 apples!

From the very beginning, results with NAA were so spectacular that stop drop sprays soon became universally used wherever harvest drop of apples was a problem. It was soon learned that NAA, while spectacular in most instances, left much to be desired as a stop drop spray. The

chief weakness was found to be its limited effective period. Particularly under eastern conditions, it frequently "runs out" before harvest is concluded.

Through the years research workers have discovered several new growth-regulating chemicals that have proved superior to NAA, at least on some varieties and under certain conditions. Without question the outstanding addition to the list of effective chemicals was reported by Drs. Hoffman and Edgerton in 1949.

Working in New York with McIntosh, these investigators found 2,4,5-TP to be superior to NAA in both intensity and duration of effect. Subsequent work throughout the country, has definitely established 2,4,5-TP to be an outstanding material in preventing the drop of all commercial varieties of apples. It has almost completely replaced NAA in several major apple sections of the country.

Other materials which have been found to control drop of some varieties better than NAA include 2,4-D, 2,4,5-T, and 2,4,5-TA. However, their use is limited, chiefly because

there are relatively few varieties on which they are effective.

2,4,5-TP used in bulk or conventional concentrations (10 to 20 ppm) approaches perfection, particularly in the Pacific Northwest, as a stop drop spray for apples. In other areas it has proved superior to NAA under most conditions.

It has an effective period ranging from 3 weeks on McIntosh (Northeast) to 6 or 7 weeks on Delicious and Winesap (Pacific Northwest). With any given variety in any particular area it has an effective period about double that of NAA. Because of this, there is greater latitude in timing the spray.

It is important to remember, however, that 2,4,5-TP is slower to take effect than NAA and consequently should be applied at least a week or 10 days ahead of anticipated drop. If applied too far in advance of harvest, it is likely to hasten maturity. This is particularly true in the case of summer varieties. By avoiding early applications and using a reduced concentration (5 to 10 ppm) ripening effects can be kept at a minimum.

(Continued on page 24)

State NEWS

- Growers Enthused About Quality Apple Crop
- Michigan Gets Its First Controlled Atmosphere Storage

Ornery Peach Trees

MARYLAND—Trees from two to eight years old, mostly peach but also some plum and red cherry, are continuing to fold up. Diagnosis has been old hurricane injury, drought, mouse injury, flooding, winter injury, deep planting, poor soil, and just plain ornerness—at least there is no apparent cause. There has been considerable loss, but there are some fine trees in the newly planted blocks.—*A. F. Vierheller, Sec'y, College Park.*

Normal Crop

VIRGINIA—In spite of short crops in the northern area, the state will have normal crops of apples and peaches. Insects and diseases have been difficult to control, but good rains recently indicate good size fruit.

J. Kenneth Robinson has been elected president of the Agricultural Conference Board of Virginia. This is an organization of farm organizations in the state.—*John F. Watson, Sec'y, Staunton.*

Colored Disks

ILLINOIS—Colored disks are being used this year at peach picking time to establish maturity levels. The colors enable the picking foreman to reduce or eliminate the proportion of green fruit in the pack.

Hail in the Cobden area in mid-July damaged about 100,000 bushels of peaches but despite this heavy damage growers will pack a commercial crop of about 500,000 bushels of Elbertas.

The estimated apple crop of 1,500,000 bushels is of excellent quality.—*Harold J. Hartley, Sec'y, Carbondale.*

WHY HOE IT ALONE?

This is the title of an interesting and descriptive booklet explaining the aims and purposes of the Vegetable Growers Association of America, the only national organization composed of and controlled by vegetable growers. To obtain a copy write Joseph S. Shelly, Secretary, Vegetable Growers Association of America, Inc., 528 Mills Bldg., 17th & Pennsylvania N.W., Washington, D.C.

Repeat Performance

WISCONSIN—A normal apple crop of above average quality is expected. Some growers report a light crop, others have been surprised that after a heavy crop last year the trees have repeated. This is especially true of McIntosh and Cortland.

Wisconsin Apple Institute is carrying on a vigorous apple promotion program over radio and television and in newspapers. Finalists in the county apple pie demonstration contest will demonstrate on TV in five different appearances.—*H. J. Rahmlow, Sec'y, Madison.*

Quality Peaches

INDIANA—One of the finest peach crops in years is being harvested. It is anticipated that the apple crop will do equally well.—*George A. Adrian, Sec'y, Indianapolis.*

Fruit Crops in Michigan

MICHIGAN—General outlook for the

C-A STORAGE IN MICHIGAN

Vernon Bull of Casnovia, Kent County, is building the first controlled atmosphere storage in Michigan. It will be completed for the fall apple crop.

The storage will consist of two 20x44-foot rooms, each with 5200-bushel capacity. Another room, of 3000-bushel capacity, in his present refrigerated storage facilities, also will be fitted for controlled atmosphere storage, but here Bull plans to conduct experimental work, using plastic box liners or large plastic bags for his apples.

Michigan State University specialists are co-operating with Mr. Bull in construction of the storage.

Erwin Klenk of Sparta, Kent County, is remodeling present storage space for atmosphere control.—*John A. Chisholm.*

tree fruit crop is good, but cool temperatures during bloom and hail during the summer months have caused serious losses for some growers. Dry weather during strawberry harvest resulted in heavy losses in southwestern Michigan. The apple crop looks excellent at this time.

Estimated fruit crop yields for 1956, as given by Michigan Crop Reporting Service, are: strawberries—968,000 24-quart

crates; sour cherries—57,000 tons; sweet cherries—9,000 tons; peaches—2,650,000 bushels; pears—1,150,000 bushels; plums—4,500 tons; apples—10,000,000 bushels; and grapes—55,000 tons.—*Arthur E. Mitchell, Asst. Sec'y, East Lansing.*

Reorganization

FLORIDA—The departments of horticulture and home economics of the University of Florida College of Agriculture, Gainesville, have been divided into four departments: Food technology and nutrition, headed by Dr. R. A. Dennison, former acting head of the department of horticulture; fruit crops, headed by Dr. John W. Sites, who is also assistant director of the experiment station; vegetable crops, headed by Dr. F. S. Jamison; and ornamental and floricultural crops, headed by Dr. E. W. McElwee.—*J. Francis Cooper, Edit'l Dept. Head, Gainesville.*

Dry Weather Results

IOWA—After weeks of dry weather, the
(Continued on page 18)

FRUIT PEST HANDBOOK

(FIFTY-THIRD OF A SERIES)

STRAWBERRY RED STELE

THE most important fungus root disease of strawberries in the United States is red stele. Although red stele was first recognized in this country in 1931, it may have been present and causing serious losses many years earlier. It is widely distributed in the northern two-thirds of the country and has been found occasionally as far south as Georgia and Arkansas.

Red stele is a cool-weather disease, which causes damage in late winter and spring. It is most destructive in heavy or poorly drained soils. Aboveground symptoms are stunting, wilting, and dying of plants. Younger leaves on diseased plants may have a bluish-green cast and the older leaves may turn yellow or red. When diseased plants are dug, the roots often have a rat-tail appearance, unbranched, with black tips or patches. When such a root is split lengthwise, the stele, or central vascular cylinder, has a distinctive brownish-red color in contrast to the surrounding softer tissue of the cortex, which has a normal yellowish-white color. Symptoms disappear when the fungus becomes inactive during warm summer weather, but generally reappear the following fall or spring.

Damage may be limited to a few plants in a low area of a field or may be so severe and widespread as to prevent strawberry growing in an entire locality. For a strawberry grower the most distressing fact about red stele is that once the disease appears in a field the fungus persists for several years in the soil even if no strawberries are grown. There is no practical method of soil treatment or crop rotation to get rid of it.

Red stele is spread principally by distribution of diseased plants. Quarantine and certification inspections must often be made during periods when symptoms do not show. Once red stele is in an area, further spread of the causal fungus can occur in water draining into lower areas or in soil carried on farm implements.

Control. The only practical control for red
(Continued on page 18)

Strawberry plant at right shows symptoms of red stele root rot. Photograph courtesy USDA.



Yakima Round-Up:

BAGGING in the NORTHWEST

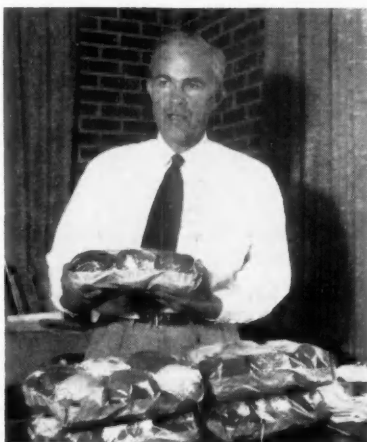
Only a small percentage of fruit is bagged before shipping, survey of Yakima packers shows

By JACK WHITNALL

A QUICK check among Yakima apple shippers seems to indicate that opinions and usage of bags varies as widely as a politician's promise.

The percentage of apples shipped in bags is small—from 5 to 20%. Soft fruits have been bagged only on an experimental basis. Some houses bag apples only on special orders. A few others have bagged before receiving orders.

Elon Gilbert, head of the pioneer fruit firm of Richey & Gilbert Company, shipped approximately 5% of



Elon Gilbert, of Richey & Gilbert Company, shows the gift package of six large Delicious apples which is a specialty of his house. Bags are made of transparent Mylar, Du Pont's new polyester film.



Herb Frank (left) and Paul Lancaster, of Yakima Fruit & Cold Storage Company, show the bags they've been experimenting with in the packaging of plums and other soft fruit. The bags are packed in these corrugated master containers.

his apples in bags. Gilbert has also experimented with packaging all types of fruit in bags, including cherries, apricots, plums, prunes, and some peaches.

Holtzinger Fruit Company, another pioneer fruit firm, shipped approximately one-fifth of their apple pack in 3- and 4-pound polyethylene bags.

The Yakima Fruit Growers Association has in past years shipped some cherries in bags.

"But this year we are using double-faced lugs, bunch face," Paul Van Wormer, assistant general manager of the company, reported. "We are also using some Mylar."

Herb Frank and Paul Lancaster, of Yakima Fruit & Cold Storage,



The Yakima Fruit Growers Association has shipped cherries in bags packed in corrugated containers, as shown here. This year most of Big Y cherries went to market in double-faced lugs, bunch-free.

have been experimenting with soft fruit packaging.

"We've developed a market for small apples with bags. In the next few years we hope to develop a market for soft fruit," Lancaster reported.

Hunt Boyd, sales manager of Rainier Fruit company, reported approximately 5% of their apples were put in bags. These were packaged on special orders only.

Shippers and packers appear to be feeling their way on the bag situation. If they find a hot market, they will jump into it with what the customer wants.

THE END



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By Norman F. Childers

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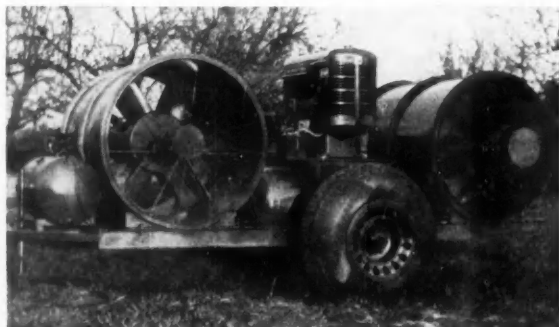
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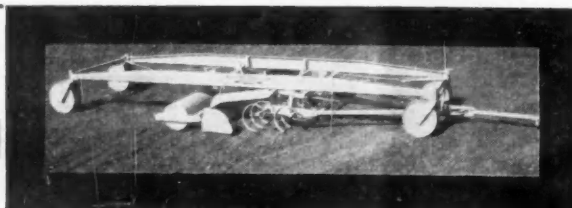
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Al Gotelli (left) and Mel Oneto watch machine which cuts clusters of cherries apart so they can be graded automatically one by one. The pencil-like fingers of steel pick up the clusters and swiftly-revolving wheels cut them apart.

CHERRY Cluster-Cutter

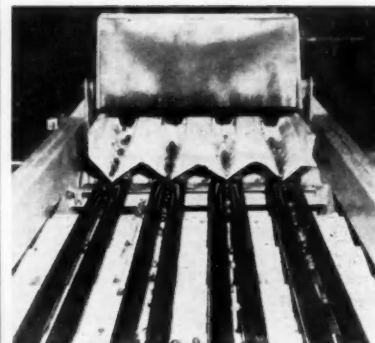
New machine speeds automatic grading job

GRADING sweet cherries is a faster, more efficient operation at the Oneto-Gotelli packing house at Stockton, Calif., since the introduction of a new cluster-cutting machine.

Alert to new ways of streamlining the handling of the Bing cherries grown on their near-by farms, Mel and John Oneto and Al and Del Gotelli invented a machine which breaks the clusters of cherries apart so the fruit can run through a size grading machine one at a time.

The cherries are brought in Los Angeles lugs from the orchards, and dumped, a few boxes at a time, on endless belts. Women workers remove the splits, doubles, and other unsalable fruit from the line.

After inspection the cherries move to a belt which carries them through



Automatic grader in use at Gotelli-Oneto packing house. Cherries come through purifying wash at top, move into channels, and drop on revolving rollers. Each set of rollers rotates upward and outward, with a special-composition surface of virtually frictionless material. The rollers are set farther apart at lower than at upper end. Smaller cherries drop through first, others ride down rollers until opening is large enough. Rows of lugs below rollers catch the graded cherries.

AMERICAN FRUIT GROWER

the cluster-cutting machine. The cluster-cutter does a 95% efficient job, its inventors say. Two girls pick out the few clusters which get by the machine.

Before moving through the grader, the cherries get a cold-water bath containing a flavor-seal protection developed by the Food Machinery & Chemical Corp.

The patented cluster-cutting machine will be distributed soon by its inventors. **THE END.**

RECORD BERRY CROP

BERRY growers in Sonoma County, California, have just finished the largest season in their history. The Sebastopol Berry Association, representing 70 growers and 80% of the county's production, marketed in excess of last year's total of 900 tons.

Boysenberries accounted for 481 acres of the county's 564-acre crop. Next were Youngberries with 41.8 acres, blueberries 19 acres, and other varieties 13 acres.—*Neale Leslie.*

HARD BLOW

GRAVENSTEIN apple growers in California were dealt a hard blow when they learned recently that new government regulations call for the purchase of only US Fancy and US No. 1 grade apples for the U. S. Army. One of the requirements for both of these grades is a red apple.

For the past five years, 11.6% of the Gravenstein crop has been purchased by the government.—*Neale Leslie.*

AMMONIA IN ORCHARDS

SPEED and the ease with which the material is applied have convinced a lot of Oregon nut growers that aqua ammonia has a definite place in their orchard fertility program. This ammonia contains 20% available nitrogen in liquid form.

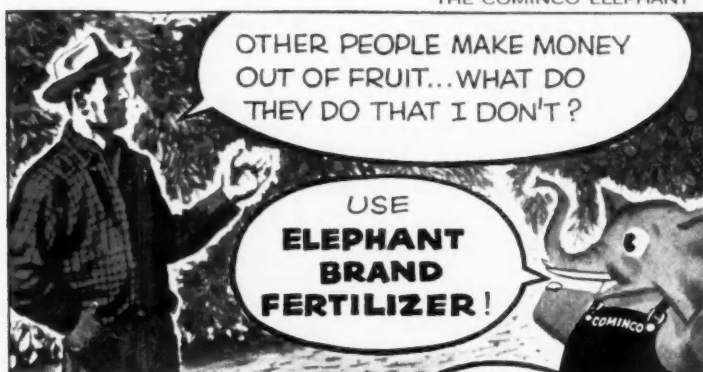
Jim Nelson, of Dayton, applied 52 gallons per acre on his 27-acre filbert grove. He said it costs about \$44 per ton of solution and compares favorably with the cost of other nitrogen fertilizers. Each gallon of the material weighs 8 pounds, so he applied 416 pounds per acre or 82 pounds of actual nitrogen. He planned for around one pound of nitrogen per tree. He has planted 75 trees an acre.

Two of the locals of Oregon Nut Growers, Inc., have purchased an aqua ammonia applicator as a co-sponsored grower service. These applicators have a 16-foot boom. A hydraulic lift raises and lowers the applicator teeth and the solution is released automatically only when the machine is in motion.—*Harold and Lillie Larsen.*

SEPTEMBER, 1956

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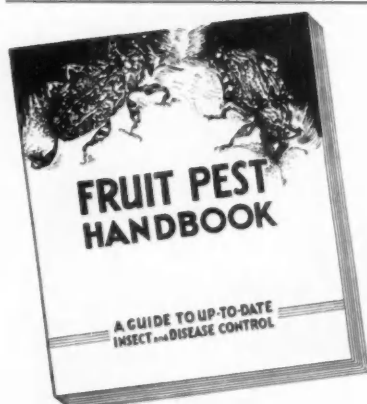
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OREGON ORCHARD TOURS

Growth regulators, antibiotics, and boron are big news among Willamette Valley growers

By HAROLD and LILLIE LARSEN

WILLAMETTE Valley growers spent a good bit of time this summer learning what their fellow growers were doing.

The use of Duraset and other hormone sprays was explained by Dr. Quentin Zielinski, of Oregon State College. He advised growers to apply these sprays during a period of wet weather at blooming time.

Results of spraying with 2,4,5-T in April to speed the ripening of cherries and increase fruit set were seen at the Emil Marx orchard, Oak Grove.

Boron Deficiencies

Growers observed the effects of boron applications in Hood River apple and pear orchards and Willamette Valley walnut groves. This has become standard practice in many orchards because of the growing evidence of boron shortage in many Oregon soils. Only a small amount of this trace element is needed in the soil, but its presence makes startling differences in yields.

Boron deficiency in apple orchards showed up as a dieback of twig growth, small leaves, and water core and corky spots in the fruit.

Walnut growers found that a boron deficiency caused "snakeheads"—the long growths which never produce foliage and die back during the winter.

Many peach growers believed that boron deficiency was the cause of necrotic leaves that are wrinkled and deformed, sometimes thick and brittle.

To supply 1 pound of boron, growers were told, they would need 10 pounds of fertilizer-grade borax or 5 pounds of a liquid spray formulation, polybor-2. This latter material is not to be confused with polybor chlorate, a weed killer and soil sterilant.

Soil experts warned the growers that applying too much boron can cause as much trouble as a deficiency. Growers should consult their county agricultural agents for the proper rates of application.

For example, curing a severe boron deficiency in walnut groves must be done over a period of years. One grower reported that an overdose of boron caused excessive growth and nut production, resulting in tree breakage.

Use of Antibiotics

Orchard tests of antibiotic sprays as a control for walnut blight look promising. In USDA field tests in

the Willamette Valley during the last three years, an antibiotic formulation containing 15% streptomycin sulfate and 1.5% terramycin gave as good control as copper spray materials.

One of the big advantages of the antibiotic sprays is that no injury results to trees from their use. Foliage injury is a constant hazard when copper sprays are used.

USDA plant pathologist P. W. Miller warned that the tests still were not conclusive. He added that there's also a problem of cost. If a 25 ppm concentration of antibiotics—the lowest concentration used in the experiments—can control a severe attack of the blight, cost will be about the same as for copper. But if it takes a higher concentration of the antibiotics to do the job, the cost will probably be prohibitive.

Blackberry Tour

The use of growth regulator sprays on Evergreen blackberries in Marion County was noted on one tour. Growers who had used the regulators since 1953 reported a noticeable increase in size during the last two or three pickings in a season. In most fields there was no noticeable effect on the first two pickings.

Most growers reported at least a 10% seasonal yield increase from the use of growth regulator solutions. However, the sprays were not as effective when soil moisture was too low when applied.

Recommendations were for 1 pint of growth regulator solution in 100 gallons of water. Also, at least 200 gallons or more of spray per acre were required to give good coverage in the average mature field of thornless Evergreen blackberries.

Timing of the sprays was reported as most important. Experimental results showed that at least two applications are necessary to give full benefits of the spray. Where best results were seen, the first application had been made approximately 14 days after full bloom or when the fruits from the first blossoms were about one-third full-grown. The second application was made eight days later.

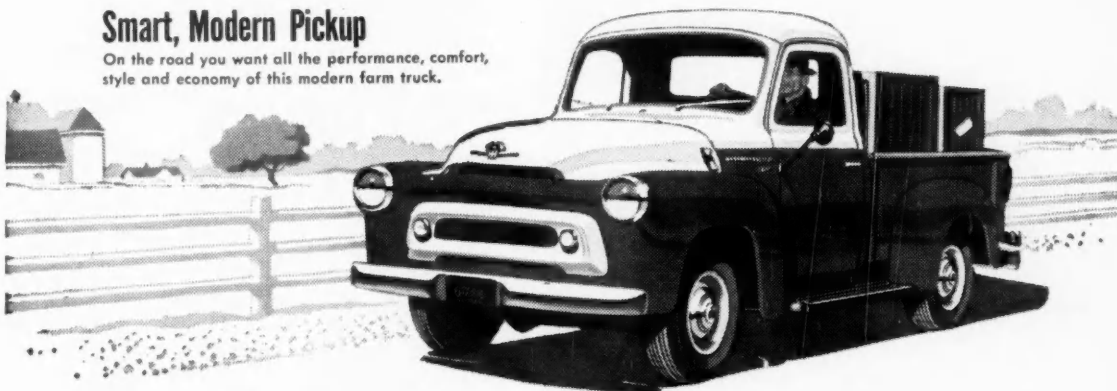
Throughout the fruit tours, it was apparent that the strawberry crop was turning out larger than at first anticipated, but it was not as large as the average year. The heat spell of mid-July shortened both the raspberry and the Boysenberry yields. The berries were dried upon the vines or they fell off before they could be picked.

THE END.

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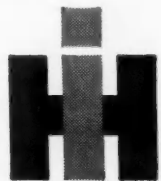
Yet with both axles engaged, it has power-plus and sure-footed traction to pull its 7,000 lbs. GVW effortlessly up steep grades, through mud. It goes where roads *can't* go.

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CALENDAR OF COMING MEETINGS & EXHIBITS

Sept. 16—Open House for Ohio Nut Grower's Association members at L. Walter Sherman farm, Lettingwell Road off Route 46, Canfield (R. D. 3).

Sept. 23-26—Produce Packaging Association 6th annual conference and exposition, Hotel Fontainebleau, Miami Beach, Fla.—Robert A. Coper, Sec'y, 500 Fifth Ave., New York 36.

Sept. 27-29—Florida Fruit and Vegetable Association annual convention, Hotel Fontainebleau, Miami Beach, Fla.—Assn. Headquarters: 4401 E. Colonial Dr., Orlando.

Sept. 29-30—La Crescent, Minn., annual apple festival.

Oct. 8-10—Texas Citrus and Vegetable Growers and Shippers 14th annual convention, Plaza Hotel, San Antonio.—E. Anson, Exec. Mgr., 306 E. Jackson, Harlingen.

Oct. 12-13—Second annual West Virginia Black Walnut Festival, Spencer.—Herb Riggles, County Agent, Spencer.

Oct. 25-Nov. 3—National Apple Week.—Norbert Eschmeyer, Sec'y, 1302 18th St. N.W., Washington 6, D.C.

Oct. 29-30—Minnesota Fruit Growers Association and Wisconsin State Horticultural Society western section convention, Winona Hotel, Winona.—H. J. Rahmlow, Sec'y, U. of Wisconsin, Madison 6.

Nov. 1-2—Western Growers Association annual convention, Sheraton-Palace Hotel, San Francisco, Calif.—Headquarters, 606 S. Hill St., Los Angeles 14.

Nov. 7-8—Wisconsin State Horticultural Society and Wisconsin Apple Institute joint annual convention, Retlaw Hotel, Fond du Lac.—H. J. Rahmlow, Sec'y, U. of Wisconsin, Madison 6.

Nov. 15-16—Iowa Fruit Growers Association annual meeting and fruit show, Ames.—R. Glenn Raines, Sec'y, State House, Des Moines.

Nov. 26-28—Illinois State Horticultural Society and Illinois Fruit Council annual meeting, Abraham Lincoln Hotel, Springfield.—Harold J. Hartley, Sec'y, Carbondale.

Dec. 3-5—New Jersey State Horticultural Society annual meeting, Atlantic City.—Ernest G. Christ, Sec'y, New Brunswick.

Dec. 3-5—Kentucky State Horticultural Society 100th anniversary meeting, with American Pomological Society co-operating, Brown Hotel, Louisville.—W. W. Magill, Sec'y, U. of Kentucky, Lexington.

Dec. 4-5—Oklahoma Pecan Growers Association annual show and convention, Ardmore.—E. L. Whitehead, Sec'y-Treas., Stillwater.

Dec. 4-6—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—A. E. Mitchell, Asst. Sec'y, Michigan State U., East Lansing.

Dec. 6-7—Tennessee State Horticultural Society 51st annual convention, Andrew Jackson Hotel, Nashville.—A. N. Pratt, Sec'y, 403 State Office Bldg., Nashville.

Dec. 6-7—Oregon State Horticultural Society 71st annual meeting, Oregon State College, Corvallis.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 7—Tennessee Pesticide Institute organization meeting, Andrew Jackson Hotel, Nashville.—A. N. Pratt, 403 State Office Bldg., Nashville.

Dec. 13-14—Kansas State Horticultural Society annual meeting, Manhattan.—W. G. Amstein, Sec'y, Manhattan.

Dec. 14-15—Western Colorado Horticultural Society annual meeting, Mesa College, Grand Junction.—Raleigh B. Flanders, Sec'y, Box 478, Grand Junction.

Dec. 14-15—Utah State Horticultural Society annual convention, Hotel Utah, Salt Lake City.—Anson Call, Sec'y, Utah State Agricultural College, Logan.

Jan. 14-16, 1957—Virginia State Horticultural Society 61st annual meeting.—John Watson, Sec'y, P. O. Box 718, Staunton.

Jan. 22-24—Indiana Horticultural Society 96th annual meeting, Severin Hotel, Indianapolis.—George A. Adrian, RR 4, Box 54-M, Indianapolis.

New York State Horticultural Society winter meetings: **Jan. 23-25**—Rochester; **Jan. 30-Feb. 1**—Kingston.—Daniel M. Dalrymple, Sec'y, Lockport.

Jan. 28-30—Pennsylvania State Horticultural Association annual meeting, Yorktowne Hotel, York.—John U. Ruef, Sec'y, University Park.

Jan. 28-31—United Fresh Fruit & Vegetable Association, Benjamin Franklin Hotel, Philadelphia.—Association headquarters: 777 14th St., N. W., Washington, D.C.

Feb. 6-8—Ohio State Horticultural Society annual meeting, Netherland-Plaza Hotel, Cincinnati.—C. W. Ellenwood, Sec'y, Wooster.

STATE NEWS

(Continued from page 16)

state is getting—too belatedly in most cases—some much needed rain. Subsoil is extremely dry. The berry crop was cut short, and since this is the third dry year in a row many fruit trees are suffering for want of moisture. In the drier areas, some trees are dying.

The apple crop will be small, but hopes are high for a good peach crop.

Robert S. Herrick, of Prole, president emeritus of Iowa State Horticultural Society and Iowa Fruit Growers Association, is leaving Iowa to take up permanent residence in Little, Colo. (R. 1, Box 44).

Mr. Herrick served horticulture in Iowa for many years. He was associate professor of horticulture in the extension service, Iowa State College, from 1915-20. For 26 years—1920-46—he served as secretary-treasurer of the horticultural society and in addition held office in many of the affiliated societies.—R. Glenn Raines, Sec'y, Des Moines.

PROCESSING PRICES

WASHINGTON—Opening prices for this season's peach and pear crops for processing have been announced by the Washington Freestone Peach Association and the Washington-Oregon Canning Pear Association.

The price of \$76.50 per ton for freestones compares with California's \$60 price and reflects the shorter than normal crop in Washington and increased production costs, association manager A. J. Anderson points out.

Prices of \$90 per ton for No. 1 pears and \$60 for No. 2's, announced by the pear association which represents approximately 56,000 tons of Bartlett's in the Northwest, compares with California's \$80 a ton base price recently accepted by canners.

Top Crop

MINNESOTA—With ideal weather conditions, apples are of high quality, size, and color.

For the 30th consecutive year Fred Ulrich, Rochester, entered fruit in the professional division at the State Fair. Fred has won many sweepstakes prizes through the years.—Thomas T. Aamodt, State Dept. of Agr.

Dry Weather Toll

KANSAS—Dry weather continues to take a heavy toll, as few orchards are situated for irrigation. Where orchards can be irrigated, however, the advantages are readily apparent, as in the apple orchards of Ezra Shields, Sam Wathena, and Robert Boeh, at Wathena, where fruit is of good size and color.—W. G. Amstein, Sec'y, Manhattan.

Peach Harvest Small

UTAH—Peach harvest is scheduled to start in early September. Due to winter injury last November and again in January some of the main peach growing areas expect only 15 to 20% of their usual crop. However, in the southwest corner of the state a bumper crop is being harvested but preaches may not size up well due to lack of irrigation water.—Anson Call, Sec'y, Logan.

Late Harvest

NEW JERSEY—This is a late season for all fruit. There will be a large volume of peaches coming after Labor Day, with Elberta harvest starting about September 1. The importance of early thinning of varieties preceding Triagem was evident this year in size of the fruit.

The green apple harvest was heavier than expected, with an excellent crop of the Starr variety. N. J. No. 2, a green apple ripening with Starr, shows consider-

able promise because of its smooth, clean appearance, firm flesh, and good size. It is equal to Starr or better for sauce and pies.

Apples in general are sizing well as a result of excellent rains.—Ernest G. Christ, Sec'y, New Brunswick.

New Pesticide Institute

TENNESSEE—At a conference held in Knoxville in June, persons interested in the formation of a Pesticide Institute met and arranged to hold an organizational meeting this fall. Temporary officers elected were: Don B. Patton, Nashville, chairman; Howard L. Bruer, Nashville, vice-chairman; Dr. J. O. Andes, University of Tennessee, Knoxville, secretary.

The organizational meeting will take place at the close of the Tennessee State Horticultural Society annual convention on December 7 in Nashville. Manufacturers and distributors of pesticides, dealer representatives, growers, and all others interested in the use or sale of pesticides have been invited to attend this meeting.—A. N. Pratt, Sec'y, Dept. of Agriculture, 403 State Office Bldg., Nashville.

Berry Breeder Dies

NORTH CAROLINA—Prof. E. B. Morrow, in charge of strawberry and blueberry breeding in the horticulture department at North Carolina State College, passed away July 18. Prof. Morrow had developed five blueberry varieties—Wolcott, Murphy, Ivanhoe, Angola, and Croatan—and two strawberry varieties—Massey and Albritton. The Albritton is outstanding in its adaptation to the commercial strawberry area of the state.—Melvin H. Kolbe, Sec'y, Raleigh.

Advantages of handling apples in bulk boxes of 16 to 20 or more bushel capacity are given in a special bulletin issued by Michigan State University entitled "Handling Apples in Bulk Boxes." Fruit handling experts H. P. Gaston and J. H. Levin are the authors. Address your request for a copy of Special Bulletin 469 to Bulletin Office, Michigan State University, Agricultural Experiment Station, East Lansing.

Vermont Growers Meet

VERMONT—The annual summer meeting of the Vermont State Horticultural Society was held at the W. W. Griffin orchards at Castleton. The meeting was well attended by apple growers, buyers, and trade representatives.

Paul Bohne, Harwood Orchards, Bennington, attended the International Apple Association meetings in Atlanta, Ga., and will be prepared to initiate plans for co-operative apple marketing.—C. L. Calahan, Sec'y, Burlington.

RED STELE

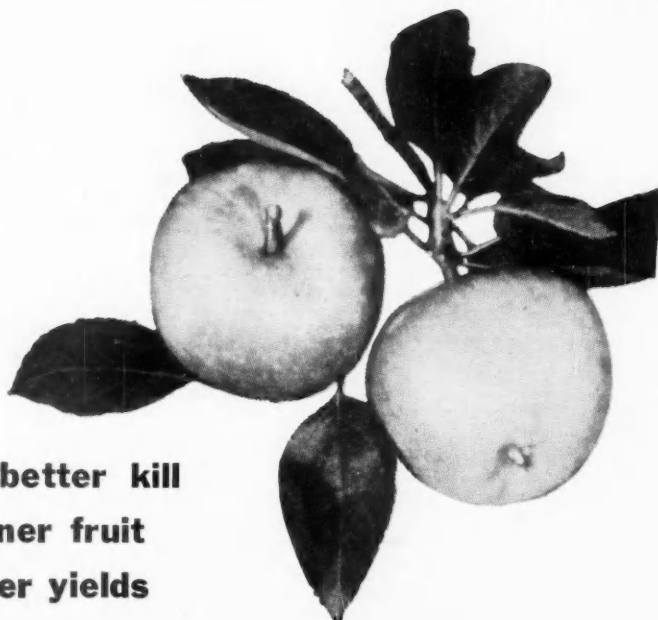
(Continued from page 16)

stele in fields infested with the fungus is the use of red-stele-resistant strawberry varieties. Resistant varieties introduced so far are Pathfinder, Red Crop, and Sparkle from New Jersey; Plentiful and Vermilion from Illinois; Orland, Monmouth, and Maine 55 from Maine; Temple, Fairland, and Stelemaster from Maryland in co-operation with the USDA; and Siletz from Oregon, also in co-operation with the USDA. Some of these are locally adapted and are of indifferent quality when grown elsewhere. Others, such as Sparkle and Fairland, are widely grown.

Since release of the first resistant varieties, races of the red stele fungus capable of infecting and damaging them have appeared in several areas. The variety Stelemaster carries resistance to three races of the fungus. A number of resistant selections are under test and several other states are beginning to consider red stele resistance in their strawberry breeding programs.

The best way for a grower to avoid the damages of red stele is to be sure that any plants he brings into his fields are free of this disease. If he is unlucky in this respect, the sooner he recognizes the disease, the sooner he can try to prevent further spread within the planting. The grower then has a choice of resistant varieties when he replants infested fields.—John R. McGrew, USDA.

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Each installation of United Cork Companies' B.B. Corkboard is specifically planned for the requirements of the individual fruit storage area. And each installation is followed up by United Cork Companies' engineers to assure full satisfaction to the fruit grower.

You are invited to discuss your low-temperature insulation requirements with us.

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BRANCH OFFICES IN PRINCIPAL CITIES

New

FOR YOUR PACKING HOUSE

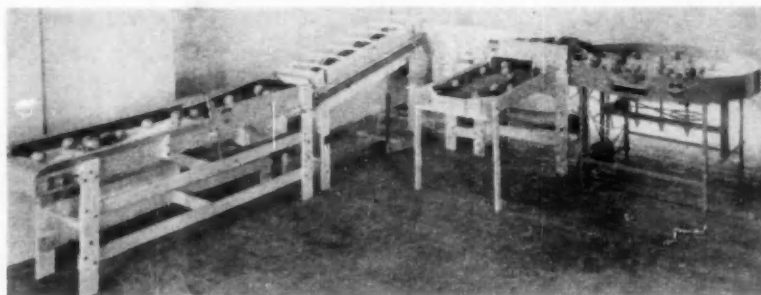
The new developments in packing and grading equipment can cut your costs, improve your pack



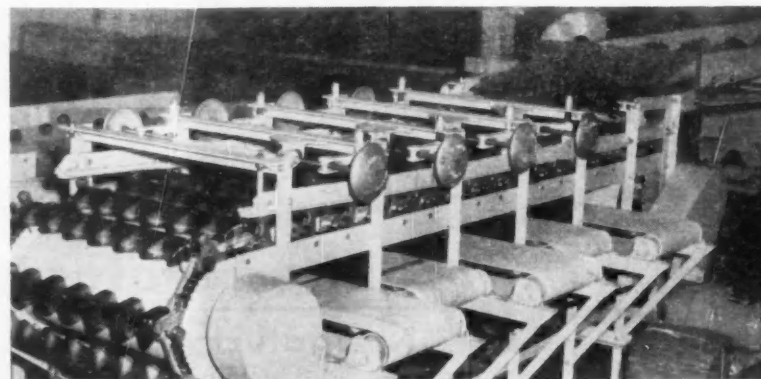
Grower-designed, the Crate Unloader is fast, yet easy to operate. A scientifically balanced pivot does the job—no springs or spring resistance. Fruit runs out evenly, gently. Of welded steel construction with cushioned cover and adjustable height, it takes Standard or Owosso crates. Cardinal & Ellis, Belding, Mich.



The Vibra-Pak solves the old problem of fruit settlement in shipment. Steady, quiet vibrators do the job quickly, easily. Adjust it to the height of your conveyor—rollers built into top of machine allow packer to roll crate or carton right onto conveyor. Automatic holding stops. Made by Cardinal & Ellis, Belding, Mich.



Friend angle grader with Market Maker rotary table handles 100 bushels per hour. It has a 4-foot receiver belt at low height for easy dumping; cull eliminating unit; elevating brusher which cleans and polishes fruit. Single sizing unit then separates fruit under 2 1/2 inches in size (or whatever size you choose) and delivers smaller fruit to side table at front left, larger fruit to rotary packing table which is 5 feet across and revolves counterclockwise at 2 rpm. Packers can be stationed around table, automatic baggers can be installed, or fruit can be run into baskets for bulk pack. The Tew Manufacturing Corp., Fairport, N.Y.



Rapid Sizer developed by Northwest Equipment Co., Yakima, Wash., and distributed in the East by the Trescott Company, Inc., Fairport, N.Y., sizes apples and peaches automatically but gently. Fruit rests between two halves of a plastic cup until separation reaches correct size and it is discharged gently onto packing belt. Five sizes can be had by adjusting dial. Sizer comes in 24- and 48-inch widths, handling 400 and 1000 bushels per hour respectively.

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THE QUESTION BOX

Don't be perplexed! Send us your questions—no matter how big or small. A three-cent stamp will bring you an early reply. Address: The Question Box, AMERICAN FRUIT GROWER, Willoughby, Ohio.

PICKER TICKETS

Do you have the name of any company that makes a business of printing sets of picker tickets?—Vermont.

Try Tyson Orchard Service, Flora Dale, Pa.

SUN-COLORING APPLES

Can you tell me if sun-coloring apples is a recommended practice?—Michigan.

If a grower is willing to pay considerable attention to small details, and if he has the labor available, sun-coloring apples can pay. S. A. Heisey and Sons, Greencastle, Pa., make a regular practice of sun-coloring apples. They select an area under the tree that does not get too much sunlight, mainly on the north side. Straw is put down and a single layer of green apples placed on top of the straw. Sun-coloring works well for them with McIntosh, Delicious, and Stayman. In one or two weeks they find the apples have about 50 per cent red color. One difficulty is advanced maturity, but with careful handling they find that sun-colored apples will store as well as those that come right off the tree. They estimate the cost at 15 cents a bushel, and in some seasons get an increased sales price of as much as 50 cents. The straw must be good and clean. If there are any weeds, they find that there is a tendency to burn the apples.

CIDER MILL CLEANER

Is there on the market a portable steam cleaner which could be used for cleaning a cider mill, racks, and cloths? Or would this be as practical and economical as using hot water from a gas or electric water heater?—Indiana.

There is a portable steam cleaner manufactured by the John Bean Div., Food Machinery & Chemical Corp., Lansing, Mich. If the steam is properly used to clean press cloths and press racks, it is the most desirable because of the higher temperature. However, unless set up to use steam adequately, water at a temperature of 190° F. or hotter will probably do a better job.

MULCH FOR GRAPES

After reading an article in AMERICAN FRUIT GROWER on mulching vineyards, I would like to mulch mine but I have a choice of either corn cobs or cottonwood sawdust and would like to know which you would recommend.—Nebraska.

Either ground corn cobs or cottonwood sawdust would be satisfactory. Since these materials are composed of a high percentage of cellulose and lignin and contain very little of the essential chemical elements needed for plant growth, it will be necessary to add nitrogen to prevent nitrogen deficiency in the vines. For this purpose, we recommend an application of about 250 pounds per acre of ammonium nitrate. This should be applied before or soon after the mulch has been spread.

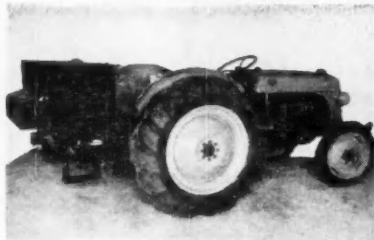
WAIST CARRIER FOR BASKETS

Do you know of a waist carrier for blueberry baskets so that both hands are free for picking?—Massachusetts.

A grower-reader of ours uses a triangular piece of strong cotton feed sacking so folded as to hold a nest of 5 or more baskets and tied securely about the waist of the picker, allowing freedom of both hands.

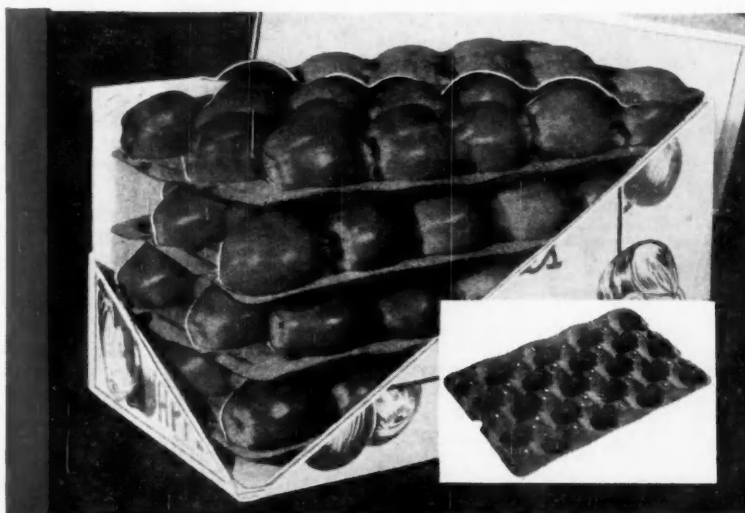
SEPTEMBER, 1956

MR. GROWER: Sow Your Cover Crop, Fertilizers, Insecticides, in Hours Instead of Days.



"The Spreader with the controllable spread". Designed especially for the berry and grape growers and the orchardists and open fields. Control width of spread from 2 ft. to 40 ft. Direct spread where you want it. Side dress, band apply, broadcasts seeds and cover crop. Why be limited to one type of spread? Write for free folder

SKIBBE SEED & FERTILIZER SPREADER, SODUS, MICH.



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Each apple packed in KYS-PAK is cushioned in its own separate compartment, perfectly protected, completely ventilated. KYS-PAK is extra-strong molded pulp, oil treated to prevent scald.

KYS-PAK cuts packing costs, saves you time and money. And because your apples arrive in 100% salable condition ready

for attractive store display, they command premium prices.

KYS-PAK is suitable for all varieties of apples and is supplied in sizes from 48 to 216 count pack. When properly graded, all these sizes will weigh 42 lbs. net per box. KYS-PAK can be used in corrugated, wood or wire-bound containers.



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Better built, for trouble-free service. All-welded steel construction. You can combine Lobe Brushers, Washers, Waxers, Return-Flow Packing Belts, as needed. Complete line of standard sizes for capacities from 50 to 300 bu. per hr. Write to—
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Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor—continuously with the Standard Inclinebelt. Compact—simple to install—minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin—address Dept. S-9.

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Quality CONTROL

Washington state apple growers
reduce bruising by scoring pickers

By EARL CARLSEN

Fruit Industries Research Foundation

DURING the past 12 years the Washington State Apple Commission has maintained a quality control program that has reached every packing plant in the state and extended outward into the orchards.

The program in the packing plant has been backed by extensive research that has popularized new and improved methods of handling and packing apples.

Movie for Pickers

The quality control program in the orchard is more to the point as harvesttime approaches. One of the main features of the apple commission's effort has been a movie, "Apple Picking Pointers." This film shows how to pick and handle apples properly and points out the tricks of picking fast.

It is frequently shown directly to the pickers by many of the orchardists. It is used by the public schools each fall and also has been shown in nearly every commercial theater in the fruit growing areas for three seasons.

Good results have come from the use of the film. A test was made with a group of Mexican nationals who had no previous picking experience. Part of the crew was shown the film, part was not. The pickers who saw the film reduced severe bruising nearly two-thirds and picked more apples.

Another key to the success of the Washington state industry's harvest quality-control program is the Washington State Apple Sampler. The sampler is a device for capping over the top of a box of apples so that, by tipping the box up on end, a cross-section sample of apples from the top and the bottom of the box can be quickly drawn. This permits getting clear to the bottom of the box where the apples are most apt to be bruised by the picker.

An inspector, frequently a girl, checks a sample of 20 apples and marks them on a score sheet. The score sheet either is given to the picker immediately or at the end of the day after three or four boxes have been checked.

The Washington State Apple Sampler was developed as a result of the industry's desire for a scoring system for use in orchards similar to



Dan Wickersham, prominent Yakima grower, examines a box of apples with the new Washington State Apple Sampler. Bag is filled with 20 apples, a cross-section sample. Apples are examined individually, the score is marked on the sheet, and the apples are placed back in the box. Sampler checks apples from all parts of the box quickly.

that which had been developed for packing plants. Previously, one of the main deterrents to quality control work in the orchard was the time element required. Usually an entire box of apples had to be inspected to get at the fruit in the bottom of the box. Now one inspector can check three times as many pickers and do it more effectively by following the systematic, objective scoring system.

The success of using the Washington State Apple Sampler in preventing bruises was shown by a study of two crews, as shown in the table below.

WASHINGTON STATE
APPLE SAMPLER SCORING SYSTEM
1950-51 SEASON

	Average Quality Scores Crew #1	Average Quality Scores Crew #2
	Per Cent	Per Cent
First day's average	89.4	91.7
Second day's average	94.5	94.7
Third day's average	96.1	95.6

Some Washington state growers pay their packers a bonus for doing quality work. The Washington State Apple Sampler with its scoring system makes this easy. In other cases, the total scores of the pickers may be posted so that each worker can see how he compares with the rest of the crew.

The sampler as well as the film, "Apple Picking Pointers," have become tools used by Washington state growers to maintain the superior quality of their fruit. **THE END.**

Motorists will be attracted to your roadside market—provided it is good-looking and well located. Working drawings for an attractive, easy-to-build stand are available for \$1.50 from **AMERICAN FRUIT GROWER**, Willoughby, Ohio.

AMERICAN FRUIT GROWER

A CHALLENGE

(Continued from page 14)

Another problem is the cost of breaking into a highly competitive market with a brand that would have to compete with the present five or six national brands.

Merchandising must be backed up with good uniform quality in order to build repeat business, and co-operatives in regions of high quality production may be unwilling to tie up with others not so favorably situated. Any tendency to use a jointly owned brand to get rid of poor quality would soon defeat a program. Likewise the use of a central sales agency only in time of surplus or heavy supplies would bring about its downfall.

Equitable and realistic pricing practices will be difficult for an overhead organization without a uniform cost system among members. For example, with different cost methods in use in multiple-product operations, one co-operative may return a substantial margin for a product under a certain price structure, while another may show a loss.

Certainly these seem formidable handicaps in joint selling, yet they can be overcome by the co-operatives working together just as growers have worked together to build sound local associations.

THE END.

NURSEYRMEN HONOR TUKEY

FOR his research work with dwarf trees and plant regulators, Dr. H. B. Tukey, head of the department of Michigan State University and associate editor of AMERICAN FRUIT GROWER, was presented with the Norman J. Coleman Award by the American Association of Nurserymen.

The award, presented annually for outstanding contributions to the nursery industry, was given to Dr. Tukey at the association's annual meeting in Los Angeles July 16. The bronze medal set in a wooden plaque is presented in memory of Mr. Coleman, the first U.S. Secretary of Agriculture.

Home Storage Tips

FRUIT growers planning to store their produce at home should get a copy of the new USDA bulletin, "Home Storage of Vegetables and Fruits." Farmers' Bulletin No. 1939 discusses storage facilities such as out-buildings, home basements, outdoor cellars, and pits for each of the commonly grown vegetables and fruits. For a free copy, write to the Office of Information, USDA, Washington 25, D.C.

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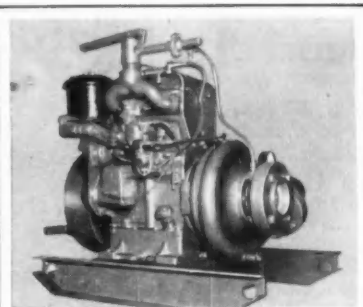


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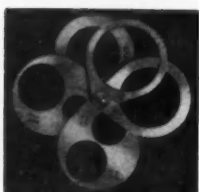
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Irrigated Soils

By D. W. Thorne and H. B. Peterson
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This book discusses soil management of arid and semi-arid soils where irrigation is necessary to crop production. The chapters on planning and carrying out irrigation are especially valuable.

Supplemental Irrigation for Eastern United States

By Harry Rubey
209 pages — \$3.50

The ABC's of irrigation for the Eastern grower. This simply-written, well-illustrated book discusses where irrigation is advisable; how to plan, install, and operate a satisfactory system; and what to expect from it.

Books sent postpaid on receipt of remittance.
AMERICAN FRUIT GROWER
Willoughby, Ohio

MORE APPLES

(Continued from page 15)

In the Pacific Northwest about 75% of hormone sprays to prevent drop are applied with aircraft using a highly concentrated mixture. Limited experimental evidence indicates that the superiority of 2,4,5-TP over NAA when applied in this manner is not generally obtained.

Airplane Spraying

In two experiments with Winesaps 2,4,5-TP did not give any longer protection than NAA when both materials were applied by air. In the same orchards ground applications of the two materials showed 2,4,5-TP to have double the effective period.

Furthermore, 2,4,5-TP when applied by airplane may result in injury to lateral buds on terminal shoot growth. This condition becomes noticeable the following year when terminals in the tops of affected trees appear naked for distances of 3 to 8 inches. This condition is more frequently observed on young, vigorous trees than on older or less vigorous ones. Many orchardists in the Northwest have no choice but to use aircraft for hormone applications, because in a close planting the interlacing limbs prevent the use of ground equipment. Fortunately, NAA, which is the only stop drop material which can be concentrated without the risk of injury, generally results in a satisfactory effective period (3 to 4 weeks) under Northwest conditions. As long as a high percentage of the orchards are sprayed with aircraft, NAA will continue to be the major stop drop material in that area.

2,4-D is a highly effective stop drop material, but has a narrow range of adaptability. Winesap and Stayman are the only commercial apple varieties to respond to 2,4-D. The long effective period and the failure to weaken under frosty conditions are its outstanding features.

On the objectionable side is the fact that injury to spur leaves on lower limbs and weak wood is sometimes suffered the year following its use. With the advent of 2,4,5-TP most

Winesap and Stayman growers have discontinued 2,4-D. However, some still use it because it is inexpensive and they are well-satisfied with the results obtained.

Stopping Pear Drops

Since severe injury may result from the use of 2,4,5-TP on Bartlett pears, the choice of a hormone spray for this fruit lies between 2,4-D and NAA.

2,4-D at a concentration of 2 or 3 ppm is rapidly gaining favor for use on Bartletts. Extensive experimental and commercial use has failed to reveal any injury when used at this concentration. It has no particular advantage over NAA except its lower cost. Both materials are highly effective over a long period of time.

The use of 2,4-D is complicated by the fact that there is no product on the market prepared specifically for preventing fruit drop. It is imperative that the non-esters or non-volatile forms of 2,4-D be used.

Several commercial firms have a satisfactory amine form of 2,4-D on the market containing 2,4-D at a concentration of 4 pounds of acid equivalent per gallon. A stock solution may be prepared by mixing 1 quart of this material in 12 gallons of water. One-fifth pint of this stock solution per 100 gallons should be used on Bartlett pears and one-half pint on Winesap and Stayman apples.

Other Stop Drop Chemicals

2,4,5-T and 2,4,5-TA are selective in action and not highly effective on most commercial varieties. However, McIntosh is very responsive to these materials, and it is on this fruit that they have been tested extensively in New York and New England.

Under most conditions there seems to be little difference between 2,4,5-T and 2,4,5-TP on McIntosh as far as intensity and duration of effect is concerned. 2,4,5-T, however, generally has less stimulatory effect on ripening and for this reason is likely to prove the preferred material for this va-

COMPARISON OF DIFFERENT HORMONE MATERIALS FOR DROP PREVENTION

Materials	Concentration ppm	Application days before start of harvest	Maturity advancement	Concentrate application	Varieties responding	Effective period days
NAA	10-20	0 to 20	None to slight	Yes	All ¹	7 to 30 ²
2,4,5-TP	10-20	5 to 35	None to moderate	No	All	20 to 50 ²
2,4-D	3-8	20 to 30	None	No	Winesap Stayman, Bartlett pears.	30 to 60
2,4,5-T	10-20	5 to 10	None to slight	No	McIntosh	20 to 25
2,4,5-TA	10-20	5 to 10	Moderate to high	No	McIntosh	20 to 25

¹ Only slightly effective on York Imperial and Golden Delicious.

² Lower figure pertains principally to McIntosh; higher figure to most varieties in the Northwest.

riety. Initial experiments with 2,4,5-TA showed superior control of drop on McIntosh when compared with all other materials, but its rather marked ripening effects may seriously limit its commercial use.

Considerable progress has been made with the addition of maleic hydrazide (100 ppm) to 2,4,5-TP and 2,4,5-TA in order to partially nullify ripening effects on varieties and in areas where this is a problem. While results have been promising, the practice has not been put to extensive use.

Weather Conditions

Of the many factors which may reduce the effectiveness of stop drop sprays, warm, dry weather during the harvest period has the most overriding influence. Under such conditions, fruit maturity is greatly accelerated, and the riper it becomes, the greater the tendency to drop.

WHEN TO PICK

(Continued from page 11)

Since the maturation of stone fruits is more affected by temperatures during the growing season for these fruits the number of days from pit hardening or some other stage of growth has been more dependable.

The successful application of these indexes varies with the type of fruit, the variety, and the area in which it is grown. Based on available information these indexes have been found most useful for several fruits:

Apples—The change in ground color from green to greenish yellow, together with the increase in overcolor in red varieties, has been the most widely applied means for determining harvest maturity. Color charts have been developed with specific shades for each important variety.

This determination has been complicated by the increasing production of solid red varieties which in some instances has necessitated the use of a minimum period from full bloom or intensity of overcolor as alternate standards. For example, in the Pacific Northwest it has been found that the red sports of Delicious require at least 142 days from full bloom to acceptable harvest maturity, although full red color may be attained several weeks earlier. Accordingly, the decision to start harvest is based on this minimum period plus a determination of internal color, quality of overcolor, and finish. If these qualities are not satisfactory at 142 days, a further wait is required.

Flesh firmness as measured with the Magness-Taylor pressure tester with a 7/16-inch plunger has not proved to be a satisfactory index for the beginning of apple harvest. Fre-

Waiting for color development during a period of warm weather should not be unduly extended, because the anticipated protection period of the spray may be considerably reduced.

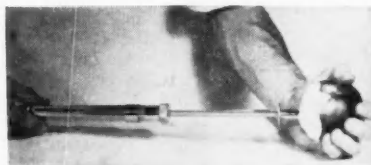
When possible, temperatures below 60° F. should be avoided during the period of spray application. Better absorption of the material takes place at relatively high temperatures. Frost will generally shorten the effective period of stop drop sprays. A heavy drop may begin within a few days after a heavy killing frost.

These are but a few examples of how weather factors may affect results. There are other conditions which are strongly suspected to alter effectiveness of the spray, but less is known about them. Special problems are continuing to be worked out, and we can expect information which will lead to their solution. THE END.

quently there is not sufficient softening of the flesh prior to a desirable beginning of harvest to provide a dependable indication. However, the instrument is valuable in determining when certain varieties are becoming too soft on the tree for satisfactory storage and may be used to measure ripening rate during storage.

Pears—Determination of flesh firmness with a pressure tester has generally provided the best single index of harvest maturity for fall and winter pears. Recommendations for desirable harvest pressure ranges have been developed and are quite widely used by inspection and regulatory agencies for determination of compliance with quality standards.

Based on averages of 10- to 20-fruit samples, tested on the pared surface of two cheeks with the Magness-Taylor tester (5/16-inch plunger),



This Magness-Taylor pressure tester, made by D. Balluff Manufacturing Co., Inc., 619 H St., N.W., Washington 1, D.C., is inserted in fruit to test for harvest maturity. It is best maturity index for fall and winter pears, can also be used for testing maturity of apples and plums.

general recommendations in pounds for some of the more common varieties are: Bartlett, 20 to 17; Comice, 11.5 to 9; Bosc, 14 to 11; Anjou, 13 to 11; and Winter Nelis, 14 to 11.

Both the upper and lower limits of
(Continued on page 28)

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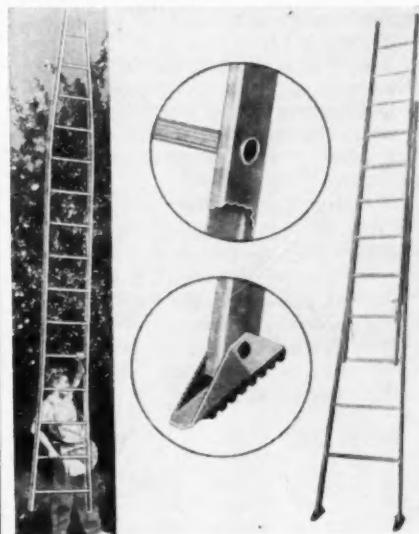
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SEPTEMBER, 1956

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56 Prayers for Year-round use by Samuel R. Guard. Prayers in this collection are for the seasons and months of the year; for special days like New Year's, Thanksgiving, and Christmas; for the blessings of God on the farm, the crops, and animals; and for God's people everywhere. Written in reverent style, these prayers are ideal for use in group worship—Sunday school, 4-H, Grange, or lodge meetings—or for home and personal use. Get your copy today at your bookstore or religious supply house. Paper edition, 50c. Cloth edition, \$1.00. Published by ABINGDON PRESS.

FOR SALE—RESPBERRY PLANTS, ORDER your Spring, 1957 MORRISON plants now. Pa. State Inspected. Rigid spray and cultivation practices insure high quality productive plants. Write for prices. HACKENBERG FRUIT FARM, R. D. No. 1, Middleburg, Pa.

THE HOW-TO BOOK ON STRAWBERRIES. Common sense treatment of the must and must-not in strawberry culture. Fully illustrated. Write AMERICAN FRUIT GROWER, Box 159, Willoughby, Ohio.

FRUIT GROWERS!! LOOKING FOR A profitable mulch?? Shredded tobacco stems are superb for mulching that will also have advantages as organic fertilizer. It has been proven by experimental use by some of the largest nursery and orchard growers. For further details, contact PAUL MCLOTHIN, Route No. 1, Bradford, Ohio, Phone 3451-7.

OF INTEREST TO WOMEN

EMBROIDER STAMPED LINENS. BUY direct from manufacturer and save. Send for FREE catalog, Dept. 994, MERRIBEE, 16 West 19th Street, New York 11, N.Y.

EARN \$50.00 FAST SEWING OUR PRECUT products. Information to THOMPSON'S, Loganville 41, Wisconsin.

ORCHARD FOR SALE

FULLY EQUIPPED APPLE ORCHARD above frost line. 90 acres apples including 50 acres young double-rod bearing heavily. Cold storage, tractors, truck, sprayers, power pruner, large grader, cider press, good water supply, 8 buildings. Superb tri-state markets. Looks like bumper crop. Sell now or after harvest. ORCHARD HILLS, Hanlin Station, Pa. Burgettstown Whitney 4-4507.

KANGAROO LAKE ORCHARDS—DOOR County, Wisconsin near Sturgeon Bay. 180 acres incl. 150 ft. on lake. 85 acres fruit trees, 9 in. house, large barn, machine shed; camp for 120 pickers; complete orchard equipment. Family now operating will stay if desired. \$20,000 down, balance on land contract at 4%. Write J. W. MARTIN, 229 E. Wisconsin Ave., Milwaukee, Wis.

500 APPLE TREES—7-ROOM CAPE COD house—Full bath—hardwood floors—2 car garage—barn—Orchard equipment—Box 164, Yarmouth, Maine.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, Munsey Building, Washington 4, D.C.

Books on fruit growing and allied subjects may be ordered through Readers' Service Department, AMERICAN FRUIT GROWER, Willoughby, Ohio. Enclose check or money order.

WHEN TO PICK

(Continued from page 25)

these ranges are important. Pears averaging substantially above the upper limit will not attain satisfactory quality when ripened, while those harvested at pressures below the lower limit are likely to be unsatisfactory for storage.

As mentioned earlier, fruits subjected to drought conditions during maturation may not soften in a typical way. For this reason, alternate standards based on ground color or soluble solids should be available. Recent experimental work in California indicates that a combination standard based on pressure test and soluble solids may reflect maturity more exactly than either index used alone.

Plums—Because the oriental-type plums (*Prunus salicina*), which constitute a large part of the fresh shipments from West Coast producing areas, soften rather rapidly as they approach maturity, flesh firmness tests have not been widely used as a maturity index.

Standards actually in use in California are based entirely on skin and flesh color. In red varieties the color increases continuously through pre-harvest maturation and postharvest ripening. The amount of color attained at harvesttime seems a satisfactory index of ultimate quality.

The Santa Rosa variety, the major variety in California, must have at least 40% of surface red to meet maturity requirements, whereas the Duarte variety must show at least 3/4 of the flesh with a distinct red color. Other varieties have specific requirements based on ground color, skin overcolor, or flesh color.

Standards for fresh prune-type plums (*Prunus domestica*) have been based both on flesh firmness and skin color. Experimental work with the Italian prune in Idaho, Washington, and Oregon, where most of the fresh market supplies originate, has resulted in recommendations for harvest at average pressure tests of 12 to 9 pounds. These figures are for the Magness-Taylor tester with 5/16-inch plunger. California standards for prune-type plums are based almost entirely on color, the average percentage of blue or purple surface color being the usual index.

Maturity investigations have been made in most of the major fruit areas with the findings applicable to the varieties produced there and the climatic and cultural conditions under which they are grown. The best sources for specific information are the research, extension, and regulatory agencies in the immediate area of production. THE END.

AMERICAN FRUIT GROWER

THREE-PLATOON PICKING

WHEN three separate picking crews harvest a tree, the results are better handling and faster harvesting, say Michigan apple growers.



Ground crew of five men begins harvest of this Golden Delicious tree. Workers in this crew do not carry or use ladders. They picked about 11 crates—a little over half the tree's total yield. Unskilled labor can work effectively here.



A mid-section crew of four follows the ground crew with 6-foot ladders which are lightweight. Crew picks all the fruit that can be reached from its ladders, then moves on to next tree. Crew's "take" from this tree was about 5 crates.



Top-section crew, also of four, moves in to complete harvest—in this case, another 5 crates. Long ladders are used continuously and more effectively than would be true if unharvested fruit were still in lower sections of tree.

For a complete discussion of "The Three-Team Method of Picking Apples," by fruit handling experts J. H. Levin and H. P. Gaston, write to Michigan Agricultural Experiment Station, East Lansing, and ask for Article 38-65, reprinted from the May, 1956, Quarterly Bulletin.

SEPTEMBER, 1956

NEOSHO NURSERIES CO.

Neosho, Mo.

Quality
Fruit Trees

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COMMERCIAL Nursery Co.
Established 1900
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OVER 50 YEARS EXPERIENCE GROWING FRUIT TREES FOR COMMERCIAL ORCHARDISTS.
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Certified Cultivated Blueberry
10 BEARING AGE PLANTS • \$3.50
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PLANTS: WHOLESALE AND RETAIL
17 VARIETIES
MONROE FARMS
BOX 2655, BROWNS MILLS, N. J.

T. B. West & Son
MAPLE BEND NURSERY
FRUIT TREES ORNAMENTAL
SMALL FRUIT PLANTS TREES AND SHRUBS
Also Dwarfs in the Popular Varieties
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PEACH APPLE TREES LOW AS 20c
Cherries, pears, plums, nut trees, strawberries, blueberries, dwarf fruit trees, grapevines 10c. Shrubs, evergreens, shade trees, roses, 25c up. Quality stock can't be sold lower. Write for FREE color catalog and \$2.00 FREE bonus information.
TENNESSEE NURSERY CO., BOX 4, Cleveland, Tennessee

FINEST QUALITY FRUIT TREES
Best varieties Peach, Apple, Pear, Plum, Cherry, Apricot and Nectarine Trees. Junio size, give quickest best fruiting. Let us send you FREE Catalog. Write today. Largest grower of TRUE TILNAME trees for 72 years.
HARRISONS' NURSERIES, Berlin, Maryland

Are YOU a Nursery Salesman?
Add to your income by selling AMERICAN FRUIT GROWER. It's a logical combination, for AMERICAN FRUIT GROWER will help your customers get the best results from the nursery stock you sell them.
Write today for our liberal, nursery agents' plan. Address:
EDWARD MEISTER, Circulation Manager
AMERICAN FRUIT GROWER
Willoughby, Ohio

Read the advertisements and remember advertisers will be glad to send you catalogs, specifications, and prices. Be sure to say you saw it in AMERICAN FRUIT GROWER.



The AP-PEACH PICKING BAG
Saves Time — Reduces Bruising
Heavy canvas over rigid frame protects fruit. Empties quickly through bottom. Especially for peaches and easily bruised apples. Write for folder.
JOHN C. BACON CORP., GASPORT, N.Y.

FREE BIG YIELD Dwarf PEACH—CHERRY—APPLE BOOK

Pear Trees plus Shrubs
Shade Trees, Perennials, etc.

YOU'LL WANT these hardy Dwarf Fruit Trees for huge harvests from a small land area. Over a dozen varieties guaranteed to bear large juicy fruit within two years—

priced right because you buy direct from the nursery. Send postcard now for new FREE Catalog of hundreds of hardy fruit trees (dwarf and standard), grapes, berry plants, flowering shrubs, perennials, fast growing shade trees, etc. Write:



KELLY BROS. NURSERIES
Dept. AFG-9
Dansville, N.Y.

25 Estate Hemlock \$15.00

Canadian Hemlock

just like those on large estates. Hardy New Hampshire grown, 18 to 24 inches. Special this month. 25 for \$15.00, 100 for \$50.00 or 500 for \$200.00. The shipment at any later date.

Bob McGuire

R.F.D. 5 Johnson City, Tenn.



Beautiful Fruit and Ornamental Hardy Plant Catalog

We think you will enjoy shopping in our large super-market type sales shed where is offered the largest selection of quality nursery stock honestly described and priced at substantial savings. SPRING HILL grows more fruit trees than any other nursery in Ohio. Visit our growing farms at Tipp City and see for yourself.

SPRING HILL NURSERIES TOM and HOWARD KYLE
Dept. AF-24, Tipp City, Ohio (Owners & Operators)

FRUIT TREES, STRAWBERRY, RASPBERRY AND BLUEBERRY PLANTS



Nut and Shade Trees, DWARF FRUIT TREES, Grape Vines, Flowering Shrubs, Evergreens. Plant this Fall! Complete line at LOW direct-from-grower prices. Highest quality, best varieties, dependable service, and satisfaction assured by one of America's oldest nurseries. Write today for Free catalogue.
BOUNTIFUL RIDGE NURSERIES
Box F-98, Princess Anne, Md.

Maloney FRUIT TREES
Write for big FREE Color Catalog. Stock Northern grown on 600 acres in Danville. Priced right. Shows Fruit Trees, Berries, Shrubs, Roses, Bulbs. Satisfaction guaranteed. Our 72nd year.
MALONEY BROS. NURSERY CO.
72 Circle Road, Danville, N. Y.

NEW GRAPES

New Interlaken SEEDLESS. Better than California. Deliciously sweet, fine flavored. Entirely seedless. Very early. Ripens Aug. 15. N.Y. Exp. Sta. origin. Full details in MILLER'S free catalog. Also nuts, fruits, roses. Guaranteed stock.

J. E. MILLER NURSERIES
545 W. Lake Road Canandaigua, N. Y.

NEW VIRUS-FREE STRAWBERRY PLANTS

Available in all leading varieties. The vigorous growth and increased production of these plants will amaze you. Complete line of nursery stock, newest peach and blight resistant pear introduction, dwarf fruit trees, blueberries, roses and evergreens. Write for free color catalog.
Tennessee Nursery Company, Box 11, Cleveland, Tenn.

American Fruit Grower

• Fruit for Health •

RICHARD T. MEISTER, Editor
H. B. TUKEY, Associate Editor

It's PEACH ROYAL Time!

A YEAR AGO we proposed that the peach industry try the "Peach Royal" as a promotional activity. This was a suggested name for the Peach Melba so common throughout Europe, consisting of half a peach surmounted by a scoop of vanilla ice cream and with some berry syrup floated in from the side—really quite delicious.

The trade has evidenced interest. Full speed ahead!

Growers Win Strike

A STRIKE by employees of the Cherry Growers, Inc., co-operative at Traverse City, Mich., was settled in what general manager A. J. Rogers called "a complete company victory."

When the strike was called, grower-members were called upon to help run the plant. Before long there were three canning lines in efficient operation. In the meantime canners throughout the state co-operated by absorbing the plant's surplus of fresh cherries so that no fruit was spoiled.

In praising the growers for their co-operation, Rogers said, "the way in which the growers handled the situation was most commendable and undoubtedly solidified our organization in a way never before thought possible."

The strike was called because of the management's refusal to grant a 20-cents per hour general wage increase; two 15-minute rest periods a day (the company agreed to only 10 minutes); and a dispute over seniority rights.

It was settled with the wages unchanged; specified and controlled rest periods agreed upon, and the seniority rights virtually the same as before.

Because of the desire that future labor contracts be brought up in the early fall instead of late spring when the season is in full swing, the contract anniversary date is October 1, when new negotiations will be started.

Who Buys Apples?

WE have been talking a lot about wooing the housewife in fruit promotion campaigns, for after all doesn't she do most of the food buying?

Now we learn that it is the men, bless 'em, who when they shop buy

proportionately more apples than do the womenfolk!

This and other startling facts have been revealed in a study of Los Angeles and Chicago markets made recently by the Fruit Research Foundation for the Washington State Apple Commission.

The study verified, of course, that the most frequent customers in the produce departments are women, accounting for over 68% in Los Angeles and 66% in Chicago. And because women shoppers were numerically greater, they accounted for three times as much of the total movement of apples as did the men.

But the men shoppers—totaling 21% in Los Angeles and over 16% in Chicago—averaged *one-half pound more* apples in each purchase than did the women. Shopping by couples totaled 11% in Los Angeles and 17.4% in Chicago.

Variety preference showed that Delicious was the popular sales leader with most every age group. McIntosh was second in popularity over-all, and in both Chicago and Los Angeles, shoppers over 51 purchased more of the predominately eastern variety.

What if any significant changes will be made in the Washington advertising program as a result of this study will be apparent in future campaigns. It would seem, however, that much of the merchandising appeal will continue to be made to the youngsters and their Mom but that Pop will appear as the smiling third party.

Fruit Growing is Such Fun!



Fruit Talk

A Horticulturist Abroad . . .

THE rich, heavily watered, agricultural lands of Burma and her eastern neighbor, Thailand, are the products of two great rivers that flow south from the mountains into the Indian Ocean and the South China Sea. Hot, humid, teeming with insects like you have never seen before, 80 to 90% of the economy of the countries dependent upon agriculture, 80 to 90% of this in turn in rice. Here is where diversification, including fruits and vegetables, needs to find a home. This is why horticultural colleagues like F. L. O'Rourke of MSU are here.

Bangkok is called the "Venice of the Orient," cut by narrow water courses along which people live in pole-supported huts, and down which they float their produce of rice, pineapple, mangoes, coconuts, bananas, and the great array of ordinary articles of commerce.

The pineapple is superb—large, rich, golden yellow, juicy, sweet—wonderfully refreshing to eat. The mangosteen, with its whitish delicious segments enclosed in a brownish capsule-like package, is about the choicest fruit this earth offers.

The mangoes, too, are good, and the citrus is excellent. For something "out of this world" try glutenized rice cooked in coconut milk and served with cold, sliced mangoes!

Beautifully netted Honey Rock melons remind you of home. And one of the men in the lecture hall is reading a recent issue of AMERICAN FRUIT GROWER!

This is the background for "The King and I"—land of temples and smiling people.

The first of the monsoon rains now begins—a mid-afternoon cooling "straight down" affair that is a blessed relief from the heat.

A short air hop out of Bangkok carries over the great interior valley of Cambodia and Indochina where rubber is king, and so down into Saigon in Vietnam—the Paris of the Orient, where the French influence is strong. Here, too, vegetables and tropical fruits do well and the opportunities for diversification are great and much needed.

Again in the air over the South China Sea, southward down the Malay Peninsula full of timber and rubber, into the English-speaking colony of Singapore.

Over a short stretch of ocean, then down in the plant paradise of Java in Indonesia, across the equator where the Southern Cross appears in the night sky. The soil is red, the rainfall is ample, the clouds roll up from all sides to shield from a tropical sun, and an afternoon rain cools for the evening. Humidity is close to 100%.

If there ever was a place that plants love, this is it. Bananas, coconuts, papayas, cassava (tapioca), mangoes, mangosteens—everything grows. Stick a cassava branch in the ground and it roots. Plant a papaya and there is fruit in 18 months. Hillsides are covered with shoulder-high, lovely soft green, symmetrical tea plants.

—H. B. T.

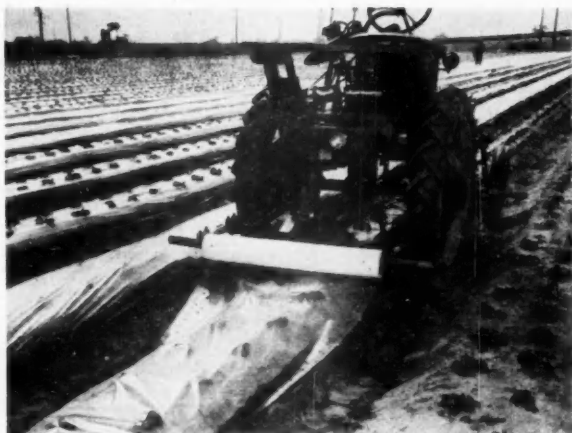
This is the third report from our associate editor, Dr. H. B. Tukey, on his trip to southeast Asia for the Atomic Energy Commission.

Coming Next Month

Special Grape Issue

- How to Grow Quality Grapes.
- The Kniffin System of Pruning.
- How to Build a Grape Trellis.
- Greater Yields from Grafted Grapes.
- French-American Hybrids.
- California's Great Grape Industry.

AMERICAN FRUIT GROWER



Polyethylene cover is laid with tractor over strawberry plants. Small perforations provide drainage.



After film is laid, slits are cut with a razor, and the plants pulled through. Berries rarely touch the soil.



Far greater percentage of crop can now be sold. Another use of polyethylene film is for an air-seal when fumigating for weed control.

Polyethylene mulch cover **brings a big return**

Film made of BAKELITE Brand Polyethylene is bringing bigger profits to more and more growers of vegetables and other crops, through greater yields or a higher percentage of marketable produce.

For example, the experience of the Ishibashi Brothers, Torrance, Calif., with strawberries: "We have been saving as much as 75 to 85 per cent of the normal berry loss experienced when crops are grown and harvested directly on the ground. In this particular case, one berry saved on each plant is enough to pay for the polyethylene. We get a bigger crop to market at just the time when prices are at their premium."

Polyethylene film used by Ishibashi Brothers is made by **Extruders, Inc.**, Hawthorne, Cal.

DID YOU KNOW: Pipe made of BAKELITE Polyethylene pays off in profits when you install a bigger water system.

*It pays to use
materials made of*



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC



New increased capacity for Ford's "2-ton" farm workhorse. Series F-600 is now rated for a whopping 19,500 lbs. GVW with optional heavy-duty components. Widest choice of modern Short Stroke power, V-8 or Six!

For big jobs, small jobs, all jobs . . .

Ford Trucks cost less!



More loadspace for your money! New 8-foot box on Ford's F-100 pickup offers more capacity than any other half-tonner. Regular 6½-foot box is one of roomiest in its class with a full 45 cu. ft. capacity.



For family use, too. The Ford Pickup rides so easy and handles so easy, even the "Missus" will enjoy running it to town! Only Ford offers you the added safety of Lifeguard Design in its DRIVERIZED cab.

Low initial cost is only one of a number of reasons why farmers everywhere find that Ford Trucks cost less.

Only Ford provides the oil and gas economy of modern Short Stroke power in every engine of the line—V-8 or Six! Ford Trucks cost less to maintain because they're built stronger to last longer.

Yes, first cost on a Ford Truck is low. Resale value is high. Ford's modern Short Stroke engines keep running costs down. And a 10½-million-truck study proves that Ford Trucks last longer.

For the best truck buy, see your Ford Dealer soon. *Buy* with confidence, *drive* with confidence and **SAVE** with confidence.

Ford Trucks last longer

Using latest registration data on 10,502,351 trucks, life insurance experts prove Ford Trucks last longer